Third Party Evaluation Report FY2025
Ministry of Foreign Affairs of Japan

Evaluation of Cooperation in the Digital and Information and Communication Technology (ICT) Sector
（Third Party Evaluation）

March 2026

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Preface

This report is an Evaluation of Cooperation in the Digital and Information and Communication Technology (ICT) Sector and was commissioned to OPMAC Corporation. by the Ministry of Foreign Affairs of Japan (MOFA) in the fiscal year 2025.

Since its commencement in 1954, Japan's Official Development Assistance (ODA) has contributed to the development of partner countries while tackling global issues. Today, the international community acknowledges the necessity to improve the effectiveness and efficiency of ODA. MOFA regularly conducts ODA evaluations, of which most are conducted at the policy-level with two main objectives: to improve the management of ODA, and to ensure its accountability. These evaluations are commissioned to external third parties to enhance transparency and objectivity.

The objective of this Evaluation is to review Japan’s overall cooperation policies in the digital and information and communication technology (ICT) sector, and to produce recommendations and lessons learned that will contribute to future policy formulation and the effective and efficient implementation of assistances by the Government of Japan in the sector. Another objective is to fulfill accountability to the public by widely disclosing the evaluation results.

The Evaluation Team in charge of this study consisted of a chief evaluator (Hiroshi Sato, President, Tokyo Institute for Development Sociology), an advisor (Takayuki Konno, Professor, Department of Education, School of Education, Meisei University), and OPMAC Corporation. President Sato supervised the entire evaluation process and Professor Konno provided advice and input on research, analysis, and report writing as an expert on Digital and ICT. In addition, to complete this study, we have received support from MOFA, the Japan International Cooperation Agency (JICA), and local ODA Task Forces, as well as government agencies, project implementation agencies, other donors, non-governmental organizations (NGOs), and private companies in Ethiopia and Bangladesh. We would like to take this opportunity to express our sincere gratitude to all those who supported this study.

Finally, the Evaluation Team wishes to note that the opinions expressed in this report do not necessarily reflect the views or positions of the Government of Japan.

March 2026
OPMAC Corporation

Note: This English version is a translation of the Japanese Evaluation Report of ”Evaluation of Cooperation in the Digital and Information and Communication Technology (ICT) Sector”.

Evaluation of Cooperation in the Digital and Information and Communication Technology (ICT) Sector
(Executive Summary)

Signboard in the training room of the Bangladesh ICT HRD Project

Evaluators (Evaluation Team)

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Tokyo Institute for Development Sociology
・Advisor: Takayuki Konno, Professor, Department of Education,
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・Consultant: OPMAC Corporation

Evaluation Period: Japanese Fiscal Year (JFY) 2019 -2024
Period of the Evaluation Study: June 2025 – May 2026
Field Survey Countries: Ethiopia and Bangladesh

Background, Objectives and Scope of the Evaluation

In recent years, digitalization has advanced rapidly in the international community, creating new challenges that require responses, such as cybersecurity threats and the digital divide. Japan's Development Cooperation Charter positions "quality growth" and the "eradication of poverty" as the fundamental objectives of international cooperation and identifies the digital and ICT sector as a priority area for achieving objectives of ODA. This evaluation examines the overall policies for Japan's ODA cooperation in the digital and ICT sector during the evaluation period, and assesses the relevance of the policies, the effectiveness of results, and the appropriateness of processes from multiple viewpoints.

Summary of the Evaluation Results

●Evaluation from Development Viewpoints

(1) Relevance of Policies

Japan positions the introduction of ICT and digital transformation (DX) as priority areas in its Development Cooperation Charter. During the evaluation period, many partner countries in JICA projects had national digital and ICT policies, and consistency with these policies was confirmed at the project planning stage. Policies were also aligned with international frameworks such as the SDGs and the G20, and Japan actively participates in related international discussions. Other donor agencies likewise prioritize the ICT sector: the World Bank has strengths in policy support, the Asian Development Bank and the African Development Bank in the development of infrastructure, while JICA has an advantage in capacity development.

(Rating: Satisfactory)

(2) Effectiveness of Results

Japan's financial commitment to cooperation in the ICT sector has grown year by year, with increasing resource deployment focused mainly on Asia and Africa. Assistance has mainly centered on the introduction of ICT and on capacity building, with contributions to solving local development challenges. Cooperations in telecommunications infrastructure, human resource development, and cybersecurity enhancement have helped narrow disparities in access to information. In Bangladesh and Ethiopia, results have been confirmed in administrative

digitalization and ICT human resource development, and progress toward sustainable operation has also been observed. While these measures are expected to enhance local industrial competitiveness, create employment, and promote inclusive growth, challenges remain in terms of sustainability and institutional arrangements, including difficulties in quantifying outcomes and measuring nationwide spillover impacts.

(Rating: Satisfactory)

(3) Appropriateness of Processes

Japan's digital and ICT cooperation has actively fostered partnerships with private companies, international organizations, local governments, and universities, with co-creation confirmed through field surveys. While institutional design that considers local needs and risks has progressed, challenges remain in institutional capacity, including insufficient cross-sectoral coordination at the local level, shortages of specialized personnel, and limited on-site resources. In addition, field-level issues such as disparities in telecommunications infrastructure and digital literacy, as well as the risk of equipment obsolescence, were also observed.

(Rating: Partially Satisfactory)

(Note) Rating: Highly Satisfactory/ Satisfactory/ Partially Satisfactory/ Unsatisfactory

●Diplomatic Viewpoints

(1) Diplomatic Importance

Japan's ODA cooperation in the digital and ICT sector plays a key role in underpinning international rule-making and order in cyberspace and data flows. Through such cooperation, Japan showcases its values and standards to the international community, while incorporating Japanese expertise and technologies into local institutional frameworks and operational practices. This enhances the international acceptance of rules and norms originating from Japan. This enhances Japan's norm-setting capacity, leading to greater consideration of its views and proposals in international discussions and standard-setting forums. This improvement in Japan's norm-shaping capacity contributes to establishing Japan as a trusted partner in the international community and reinforces its diplomatic presence and influence.

(2) Diplomatic Impact

Japan's ODA contributes to the maintenance of international order by promoting the DFFT concept and strengthening cybersecurity, thereby ensuring transparency and security in international data flows and fostering trust among states, businesses, and individuals. Furthermore, support for telemedicine, distance learning, and disaster-management ICT contributes to enhancing the stability of local communities. Cooperation with Ethiopia and Bangladesh has stimulated economic exchange and strengthened mutual trust between these countries and Japan. The adoption of Japanese technologies and the facilitation of human resource matching have enhanced the competitiveness of Japan's domestic industries and supported the opening of emerging markets. These spillover impacts contribute to reinforcing Japan's diplomatic foundations and international influence.

Recommendations and Lessons Derived from the Evaluation Results

＜Suggestions＞

(1) Building and Consolidating a Common Understanding among Stakeholders of

Japan's Assistance in the Digital and ICT Sectors

In order to build a shared understanding among stakeholders regarding the basic direction and guiding principles of cooperation in the digital and ICT sector, it is necessary to consider the updating of existing documents, the development of reference materials with clearly structured terminology, and the establishment of methodologies for formulating outcome indicators.

(2) Exploring Support Utilizing Advanced Technologies and Developing the Capacity to Apply Them

Going forward, projects should promote the application of cutting-edge technologies such as AI to improve service delivery and operational efficiency, while simultaneously strengthening the capacity of partner-country personnel to operate and manage these technologies. Building institutional arrangements that can adapt to rapid technological innovation and maintain sustainable impacts is essential.

(3) Examining Project Formulation Based on the Characteristics of the Digital and ICT Sectors

To respond effectively to rapid technological innovation, project formulation frameworks that enable swift decision-making should be introduced. In addition, clear arrangements for the handling of data, including personal information, are required to ensure legal protection and operational management.

(4) Strengthening Policy Implementation Capacity through the Dispatchment of Digital and ICT Experts

To strengthen institutional frameworks and human capacity in partner countries, specialists in the digital and ICT fields—such as experts in policy and regulatory design, ICT infrastructure planning and operation, cybersecurity, and digital human resource development—should be strategically deployed.

＜Lessons Learned＞

（1）The Significance of ICT Business Expansion by SMEs in Developing Countries and the Role of Public Support

When Japanese small and medium-sized enterprises develop ICT-related businesses in developing countries, support from Japan's ODA-related institutions plays a significant role in enhancing their credibility in the partner countries. Continuous public-sector support is important until Japanese SMEs gain sufficient recognition and trust in local markets.

（2）Challenges in the Provision of Equipment in the Digital and ICT Sectors and Policy Directions for Addressing Them

In fields characterized by rapid technological innovation, providing equipment that is less prone to obsolescence and has high versatility is an effective approach. To ensure sustainability after project completion, it is necessary to formulate plans that include maintenance and management systems as well as appropriate disposal procedures.

(End)

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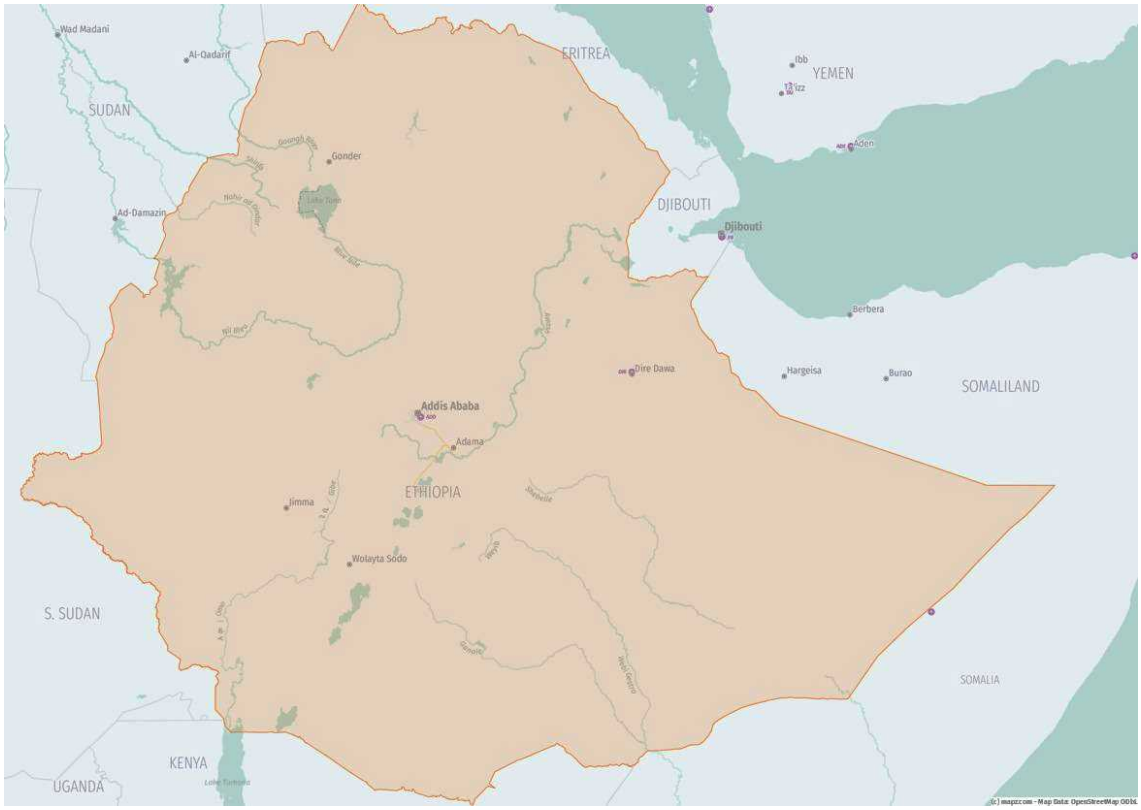
Map



Case Study Country: Ethiopia

Case Study Country: Bangladesh

List of Abbreviations

Abbreviations	Meaning
ADB	Asian Development Bank
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AI	Artificial Intelligence
AJCCBC	ASEAN-Japan Cybersecurity Capacity Building Centre
ASEAN	Association of Southeast Asian Nations
AU	African Union
C2R	Connect2Recover
CPD	Continuing Professional Development
DFFT	Data Free Flow with Trust
DPI	Digital Public Infrastructure
DX	Digital Transformation
ECA	Ethiopia Communication Authority
EdTech	Education Technology
EMIS	Education Management Information System
E/N	Exchange of Notes
EU	European Union
EUDR	EU Deforestation Regulation
FOIP	Free and Open Indo-Pacific Strategy
FTC	Farmer training Centers
GPAI	Global Partnership on Artificial Intelligence
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit:
ICT	Information and Communication Technology
IOM	International Organization for Migration
IoT	Internet of Things
IT	Information Technology
ITS	Intelligent Transport Systems
JCC	Joint Coordination Committee
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
KOICA	Korea International Cooperation Agency
LDC	Least Developed Countries
LMS	Learning Management System
NGO	Non-Governmental Organization

Abbreviations	Meaning
NPO	Non-Profit Organization
NSDI	National Spatial Data infrastructure
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PoC	Proof of Concept
QUAD	Quadrilateral Security Dialogue
RAN	Radio Access Network
SATREPS	Science and Technology Research Partnership for Sustainable Development
SDGs	Sustainable Development Goals
SHEP	Smallholder Horticulture Empowerment & Promotion
SIS	Student Information System
SN2025	Senegal Digital Strategy 2025
SNS	Social Networking Service
STI	Science, Technology and Innovation
TICAD	Tokyo International Conference on African Development
TYS	Ten-Year Strategy
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
WFP	World Food Programme
WB	World Bank
YEIBs	Youth Entrepreneurship and Investment Bank

Chapter 1　Background, Objectives and Evaluation Framework

1. Background and Objectives of Evaluation

Japan has already positioned information and communication technology (ICT) as one of the priority issues for achieving “quality growth” under the former Development Cooperation Charter (2015), and, under the revised Development Cooperation Charter (2023), has explicitly identified digital transformation (DX) as a key driver for addressing development challenges. In line with the revised Development Cooperation Charter, “Co-creation for common agenda initiative" has been launched to strengthen strategic support for priority areas, including digital development. In the digital and ICT sector, Japan promotes foundational support such as the development of legal and institutional frameworks, human resource development, and the improvement of telecommunications and broadcasting infrastructure, while also advancing the promotion of Data Free Flow with Trust (DFFT)[1]. In addition, Japan will work to promote data utilization and solve problems through the social implementation of digital technology, and also address the digital divide and vulnerabilities (cybersecurity).

The dissemination of digital technologies and ICT serves as a foundation for supporting DX and contributes to industrial upgrading and productivity enhancement, while also helping to address social challenges in areas such as health, education, disaster prevention, and environment. In addition, through assistance such as the promotion of information disclosure and the development of broadcasting media, Japan has helped foster the formation of democratic societies in developing countries. Through these efforts, Japan has been deeply engaged in international initiatives aimed at realizing a sustainable society. On the other hand, in recent years, threats to free and secure cyberspace have become increasingly evident and strengthening cooperation across the international community as well as enhancing cybersecurity capacities in developing countries have emerged as urgent challenges. Addressing this issue is also of critical importance for Japan in contributing to international stability and order.

In light of the above circumstances, this research conducts evaluation and analysis of Japan’s development cooperation policies in the digital and ICT sector under its Official Development Assistance (ODA), as well as individual projects implemented based on these policies. It examines the background and rationale leading to the implementation of each project, and organizes and considers current and near-future trends in the digital and ICT sector. Based on the findings, the research derives lessons learned, and recommendations to inform future policy formulation and project development. In particular, recommendations are formulated with a view to developing concrete projects to be implemented within the next five years, especially in the Indo-Pacific and African regions. In addition, it is aimed that

[1] This is a concept that seeks to promote internationally free cross-border data flows, enabling data that is valuable for business and for addressing societal challenges to move freely across borders, while ensuring trust in areas such as privacy, security, and intellectual property rights.

the evaluation results of the research will be disclosed to the public thus fulfilling accountability to citizens.

2. Scope of Evaluation

The scope of evaluation of this research are set out in the table below.

Table 1-1：Scope of Evaluation

Items	Contents
Evaluation period	・ A total of six years from Fiscal Year 2019 to Fiscal Year 2024, covering both completed and ongoing projects implemented during this period.
Scope and Perspectives of the Evaluation	(1) To conduct a cross-sectoral review of Japan's development cooperation in the digital and ICT sector in countries and regions where Japan has provided support. (2) To place particular focus on the Indo-Pacific and African regions among those countries and regions where Japan has provided support, and to collect and analyze information to identify Japan's comparative advantages and to contribute to the formulation of broadly applicable project models in these regions. (3) To analyze the background to the implementation of each project, as well as current and near-future trends in the digital and ICT sector, and to link these findings to recommendations for project development to be implemented within the next five years.
Case Studies (Field Survey Countries)	・ Bangladesh and Ethiopia ・ Efforts will be made to identify and analyze projects implemented by other donor agencies and to extract lessons learned. ・ As necessary, efforts will be made to collect and analyze information from countries and regions where support has been provided other than the case study countries .

Source: Prepared by the Evaluation Team

Japan's Development Cooperation Charter has, through successive revisions, consistently positioned "quality growth" and the "eradication of poverty" achieved through such growth as the fundamental objectives of international cooperation. Traditionally, the ICT sector has been regarded as a means to support economic development and has played a role in improving socio-economic infrastructure. However, with the increasing prominence of complex and interrelated challenges—including climate change, widening disparities, conflicts, infectious diseases, and vulnerabilities in the information space—the importance of, and expectations for, "digital" in development cooperation have undergone significant transformation. In light of these circumstances, the Development Cooperation Charter (2023) positions digital not merely as an extension of ICT support, but as a "strategic and independent priority area" encompassing DX, DFFT, and cybersecurity. JICA, as the implementing agency of ODA, is also advancing its cooperation policies from both viewpoints of "DX mainstreaming" and "digital infrastructure development." Figure 1-1 presents the objective framework organized in alignment with these two approaches.

This objective framework presents a logic model illustrating how support in the digital

sector contributes to Japan's Development Cooperation Charter's impact goal—namely, the eradication of poverty through quality growth—through the accumulation of specific inputs, outputs, and outcomes. The structure consists of two outcomes pathways arranged on the left and right, both of which ultimately converge toward the same overarching impact.

The starting point (input) of the logic model is "development cooperation measures in the digital and ICT sector." Based on data from the Organization for Economic Co-operation and Development (OECD), as well as JICA's ex-ante and ex-post project evaluation data, this research examined whether ICT and DX elements were incorporated into project plans and whether such elements were implemented. In doing so, development cooperation in the digital and ICT sector implemented in the fields of "health," "agriculture," and "education" was selected as the primary focus of the evaluation. This selection was made because a sectoral classification of approximately 1,200 JICA ex-ante evaluation sheets and 850 ex-post evaluation reports prepared between 2019 and 2024 showed that a large number of digital and ICT-related development cooperation projects were implemented in the "health" and "agriculture" sectors. Furthermore, the "education" sector was also included as part of the evaluation targets, taking into account that Ethiopia and Bangladesh—the case study countries—have records of support in this area, that this sector is identified as a global challenge area in the Development Cooperation Charter, and that it is also highlighted as a priority thematic area in JICA's Data Collection Survey for Global DX Mainstreaming Final Report (2022).

In addition, as the survey period covers the past six years, JICA's ex-ante evaluation sheets were organized by limiting them to this period. Meanwhile, ex-post evaluation reports were organized based on the year of reporting. As a result, projects implemented prior to 2019 were also included in the research target. Consequently, information related to digital and ICT components was more frequently recorded in ex-post evaluation reports and, in terms of both volume and content, proved more effective for analytical purposes. Therefore, the extracted information tended to rely more on ex-post evaluations.

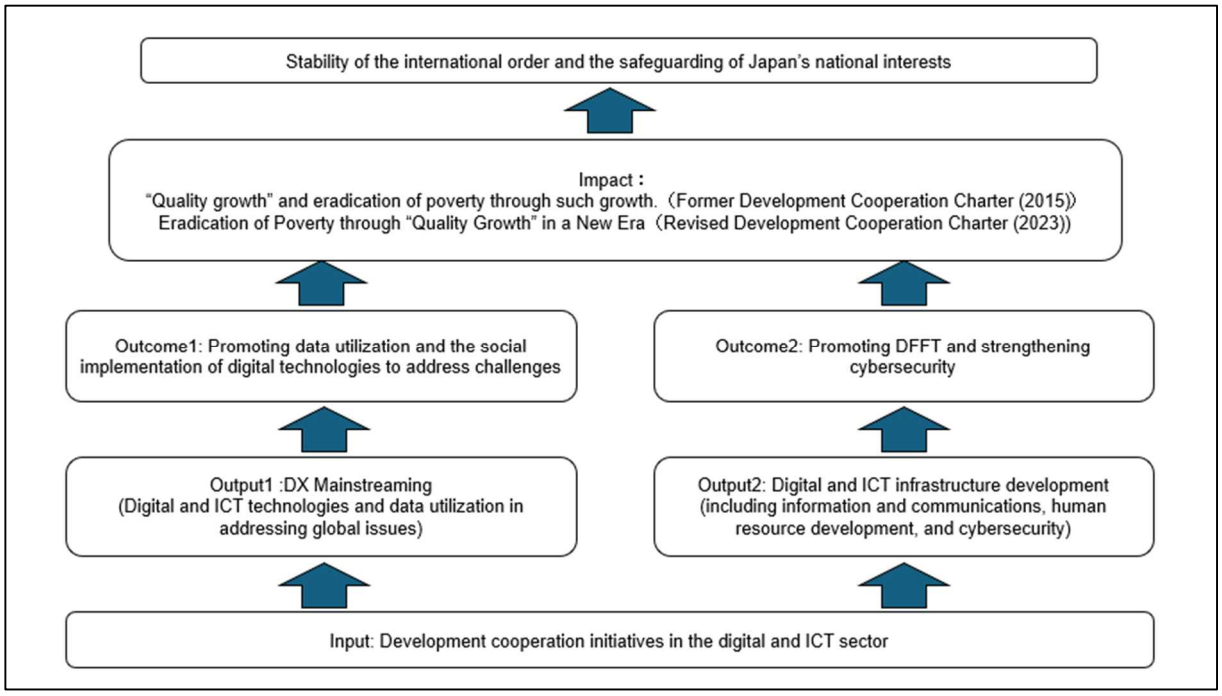
With regard to the outputs and outcomes presented below, this research examined the extent to which ICT and DX have been embedded in development cooperation projects through questionnaire surveys administered to Japan's diplomatic missions, and field surveys conducted in the case study countries.

- Output 1：DX Mainstreaming
  In this research, "DX mainstreaming" refers to a state in which digital technologies and data utilization are not treated as special measures, but are integrated as standard approaches across all development cooperation projects and phases.
- Outcome 1：Addressing Development Challenges through Data Utilization
  With DX mainstreaming firmly established, data-driven improvements advance across multiple sectors—including public administration, education, health, agriculture, and

disaster risk management, thereby contributing to the structural resolution of societal challenges. Once embedded in institutions and organizational culture, DX generates outcomes that emerge as sustainable outcomes.

- Output 2：Digital and ICT Infrastructure Development
  The development of foundational elements such as ICT infrastructure, institutional frameworks, human resource development, and cybersecurity, was positioned as a prerequisite for the effective utilization of digital technologies.
- Outcome 2：Promoting DFFT and Strengthening Cybersecurity
  As a result of foundational development, DFFT and a secure digital usage environment are ensured, thereby accelerating the social implementation of digital technologies.

The outcomes on the left and right sides of Figure 1-1 contribute to the “eradication of poverty” through “quality growth in a new era,” as set forth in the Development Cooperation Charter. Growth and stability fostered through international cooperation in the digital sector also contribute to the Charter’s ultimate objectives of development cooperation, namely, the stability of the international order and the safeguarding of Japan’s national interests.



Source: Prepared by the Evaluation Team

Figure 1-1：Objective Framework

3. Implementation Methods of Evaluation

This evaluation sets the research period from June 2025 to February 2026, during which three consultation meetings were held with officials from MOFA and JICA. The details of the work procedures of this research are described in a later section.

4. Evaluation Methodology

In this evaluation, in order to understand Japan's overall support in the digital and ICT sector from multiple angles, the research conducted verification from 4 viewpoints: (1) international trends in support for the digital and ICT sector and Japan's responses; (2) Japan's support policies and measures; (3) Japan's concrete cooperation achievements in the digital and ICT sector; and (4) analysis of the case study countries (cooperation with Ethiopia and Bangladesh). Through these analyses, the research organized Japan's assistance policies and cooperation achievements in the digital and ICT sector and conducted a comprehensive evaluation from both the "development viewpoint" and the "diplomatic viewpoint." With regard to the case study countries, these were selected based on internal discussions concerning support records and regional balance within MOFA, as well as considerations such as local survey acceptance arrangements and security conditions.

An overview of the evaluation tools is provided below.

Table 1-2：Overview of the Main Evaluation Tools

Evaluation Tools	Application of Evaluation Tools
Literature research	Former Development Cooperation Charter (2015), Development Cooperation Charter (2023), Cabinet Office materials, MOFA materials, MOFA and JICA related reports, reports of other donor agencies, etc.
Domestic Interviews	Relevant departments of MOFA, relevant departments of JICA, Miyazaki City, Miyazaki University, and IT companies located in Miyazaki City, etc.
Field survey	Embassies of Japan in Ethiopia and in Bangladesh、JICA's overseas office、local government agencies, international organizations, and project stakeholders, etc.
Questionnaire survey	Target: Japan's diplomatic missions located in partner countries where Japan implements support in the digital and ICT sector Period and Method: Online questionnaire survey (Microsoft Forms), early August–early September 2025 Number of Missions Surveyed: Japan's diplomatic missions in 97 countries Valid Responses: Japan's diplomatic missions in 97 countries Among these, Japan's diplomatic missions in 49 countries reported having experience in implementing digital and ICT-related projects.

Source: Prepared by the Evaluation Team

In this report, following an explanation of the evaluation approach in this chapter (Chapter 1), Chapter 2 provides an overview of Japan's support in the digital and ICT sector by first outlining international trends in this field and then examining how Japan has formulated its

support policies and implemented projects within this context. Chapter 3 presents the evaluation results based on the perspectives of development and diplomacy, applying the evaluation tools described above. Finally, Chapter 4 consolidates recommendations for improving Japan's future support policies in the digital and ICT sector, derived from the findings of this evaluation.

As this study covers a wide range of countries and regions and required the collection and organization of diverse information, generative artificial intelligence (generative AI) was utilized in a supplementary manner to enable efficient information organization and analysis. Information sources were limited to the official websites and publicly available documents of donor agencies, and necessary pre-processing was conducted to prevent the inclusion of unnecessary or inappropriate citations, references, or inferences generated by AI. All texts and data collected and AI-generated were verified by the evaluation team through cross-checking with primary sources to ensure accuracy, and final decisions regarding their use in this report were made by the evaluation team.

5. Evaluation Implementation Structure

This research was conducted by an evaluation team consisting of a chief evaluator, advisors, and consultants. The members of the evaluation team are listed below.

Chief Evaluator	:	Hiroshi Sato	President, Tokyo Institute for Development Sociology
Advisor	:	Takayuki Konno	Professor, Department of Education, School of Education, Meisei University
Consultant	:	Kazuhiro Nakagawa	Senior Consultant, OPMAC Corporation
Consultant	:	Yoshihiro Uemura	Senior Consultant, OPMAC Corporation
Consultant	:	Kaori Osone	Consultant, OPMAC Corporation
Consultant	:	Kazuki Kawamura	Consultant, OPMAC Corporation

6. Limitations of Evaluation

This research constitutes a policy evaluation of development cooperation in the digital and ICT sector. While support in this sector is partially described in higher-level policies, such as the Development Cooperation Charter and Strategy Document on Co-creation for Common Agenda Initiative, no mid-level policy or development cooperation strategy specifically dedicated to the digital and ICT sector currently exists. Accordingly, the evaluation was conducted based on trends inferred from a comprehensive review of individual assistances (projects) implemented as Japan's development cooperation in the digital and ICT sector.

Chapter 2　Overview of the Evaluation Target

Since 2021, international discussions on the digital and ICT sector have undergone a significant shift—from a traditionally "technology-centered" discourse, to the construction of "digital as social infrastructure"—driven by rapid technological advancement and rising geopolitical risks. In particular, the G7 has advanced international rule-making on data, AI, and digital infrastructure based on democratic values, while the G20 has moved in the direction of proposing more implementable policy frameworks such as digital government, digital public infrastructure (DPI), and AI[2] for SDGs by incorporating the priority issues of emerging and developing countries. Within this increasingly multipolar landscape of international debate, three trends—"value-based rule-making," "digitalization as a foundation for public services," and "inclusiveness and the correction of disparities"—are gradually becoming a shared common language.

However, the reality reflected in the indicators of the United Nations Sustainable Development Goals (SDGs) such as Indicator 5.b.1[3] and 9.c.1[4], reveals that, in contrast to the progress of international discussions, severe digital divides persist in the least developed countries (LDCs)[5] and Sub-Saharan Africa. While mobile phone ownership rates, mobile network service coverage, and internet usage rates have all increased, women still lack adequate access, and disparities in connectivity to advanced technologies such as 5G are in fact widening. As a result, significant delays remain in the achievement of "universal access."

1. Shaping a Value-Based International Digital Order within the G7

Since 2021, the G7 has led international discussions in the digital and technology fields and has presented comprehensive directions for addressing the rapidly evolving digital environment, grounded in the shared values of democratic nations. Looking back at this trajectory, the future vision of the digital world envisioned by the G7 reveals several notable trends.

First, the G7 has consistently emphasized the establishment of a "digital ecosystem based on democratic values." In an era in which digital technologies and data transcend borders and form the backbone of society, government-led internet shutdowns and surveillance-oriented approaches have been increasing, and the G7 has expressed concern over these actions. The maintenance of a free, open, interoperable, and reliable internet, as

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[2] According to OECD (2024), an AI system is a machine-based system that, for explicit or implicit objectives, infers how to generate outputs—such as predictions, content, recommendations, or decisions—based on the inputs it receives, and that can influence physical or virtual environments.

[3] This indicator shows the proportion of individuals who "own" a mobile phone, disaggregated by gender.

[4] This indicator shows the proportion of the population covered by at least one mobile communication network (such as 2G, 3G, 4G, or 5G).

[5] Least Developed Countries (LDCs) are countries designated by the UN Committee for Development Policy based on criteria such as per capita GNI (below US$1,088) and other indicators.

well as respect for an inclusive multi-stakeholder approach[6] involving civil society, industry, and academia in rule-making processes, are positioned as shared democratic values among G7 members. Furthermore, since 2022, following Russia's invasion of Ukraine, the importance of countering cyberattacks and disinformation has intensified, and these issues have come to be treated as central themes in international security discussions. Next, as the importance of data as a foundation for economic and social systems has increased, the G7 has continuously treated the operationalization of "DFFT" as a key priority. In order to reconcile considerations such as privacy, data protection, and intellectual property rights with the promotion of cross-border data utilization, the "Institutional Arrangement for Partnership (IAP)" was established under the OECD in 2023, advancing the development of frameworks to support international cooperation at the institutional level. This reflects the direction taken by the G7 toward developing harmonized data governance by enhancing interoperability and institutional commonality, while avoiding excessive fragmentation of data sovereignty.

Furthermore, "international efforts to establish AI governance frameworks" have advanced rapidly, driven by the rapid development of AI and foundation models. In 2023, under Japan's G7 presidency, the G7 launched the Hiroshima AI Process and formulated international guidelines and a code of conduct to address both the benefits and risks brought by AI. In response to key issues such as transparency, disinformation, intellectual property, safety, and fairness, the G7 has moved beyond merely sharing principles and has developed concrete policy tools, including a code of conduct for developers, collaboration with the OECD and the Global Partnership on Artificial Intelligence (GPAI), and multi-stakeholder consultations. Through these efforts, the G7 has clarified the direction of rule-making on AI by democratic nations.

In 2024, attention to digital government and DPI increased further. The advancement of administrative services through the use of AI, enhanced interoperability of digital IDs used by citizens, and the development of cloud infrastructure as large-scale public infrastructure have been taken up as key agenda items within the G7. In particular, the AI toolkit for the public sector published by the OECD and the United Nations Educational, Scientific and Cultural Organization (UNESCO) has been welcomed as guidance to support governments in the safe and effective adoption of AI. These developments indicate a growing trend toward institutionalizing digital technologies as foundational infrastructure for public administration and service delivery.

Finally, the G7 positions digital infrastructure as a critical foundation underpinning economic and social systems and regards ensuring its security and resilience as an essential policy issue. Specifically, the G7 promotes the development of networks that

[6] A multi-stakeholder approach refers to an approach in which three or more stakeholders participate on an equal footing in meetings for discussion, facilitating communication and consensus-building to address challenges that are difficult to resolve by a single entity or through bilateral arrangements.

combine multiple mechanisms—including next-generation communications connecting smartphones and Internet of Things (IoT) devices, submarine cables linking continents, and satellite communications that are useful in disaster situations and for remote areas—to ensure redundancy, so that if one component experiences disruption, others can compensate.

The five trends outlined above have been repeatedly emphasized in G7 documents since 2021, while becoming progressively deeper and more concrete over time. The direction set forth by the G7 goes beyond the framework of digital policy alone; it embodies a strategic vision of how to reconstruct the international order based on democratic values through digital technologies and AI. These trends are expected to continue to exert significant influence on the future of the digital economy, AI governance, and international cooperation.

2. Multipolar International Cooperation and Implementation-Oriented Policy Making within the G20

Since 2019, discussions on the digital and ICT sector within the G20 have undergone a major shift—from the introduction of technological trends to the construction of more inclusive and implementable models of international cooperation. The G20 has increasingly functioned as an international platform where diverse countries collaborate to advance digital transformation, consistently emphasizing the value of inclusive digitalization under the principle of “Leave No One Behind.”

Inclusiveness is explicitly stated in all G20 documents, with target groups expanding from regional and rural areas to women, persons with disabilities, elderly persons, and indigenous peoples. This shift reflects not only efforts to expand access to information but also growing demand for digital public services and AI applications that respect cultural and linguistic diversity. As a result, inclusiveness has come to be positioned not as a guiding principle, but as a prerequisite for policy design.

Moreover, the G20 has played a role in shaping the direction of international policy trends in the digital and ICT sector by presenting its own distinctive concepts. The concept of DFFT, introduced in the G20 Osaka Leaders’ Declaration in 2019, became a starting point for international discussions on data governance. The concept of DPI, advanced under India’s G20 presidency in 2023, presented a new approach that frames digital transformation as a foundation for public services. Under Brazil’s G20 presidency in 2024, the G20 adopted “AI for inclusive and sustainable development and the reduction of inequalities” as a key theme, positioning AI within the context of sustainable development. In particular, directions such as capacity building, technology transfer, and the use of open-source solutions were highlighted, with a view to correcting international digital divides[7] and promoting utilization

[7] The digital divide refers to the gap between those who can access and use information and communication technologies such as the internet and personal computers and those who cannot. It is commonly understood to consist of three stages.

in developing countries.

Alongside these trends in conceptual development, G20 discussions have in recent years shifted significantly toward emphasizing support for policy implementation. Since 2022, numerous practical and specific tools and frameworks that countries can directly utilize have been developed, including digital skills and literacy measurement tools, DPI governance guidelines, and toolkits for assessing AI readiness and capacity. This represents support that goes beyond the sharing of policy principles and moves into the practical stage of "how to implement," and that can be positioned as initiatives contributing to narrowing implementation gaps faced by developing countries.

Overall, G20 digital policy has evolved into a practice-oriented model of international cooperation that places inclusiveness as its core value, incorporates policy concepts originating from emerging countries, and develops implementable tools. Whereas technological trends such as 5G were emphasized in documents in 2019, they are no longer explicitly highlighted; instead, "digital as social infrastructure," such as DPI and AI for the SDGs, has become the central focus. International trends are shifting from technological competition toward the creation of social value, with continued efforts directed at more concrete and measurable goals, including universal access by 2030 and halving the gender digital divide.

3. SDGs: The Reality of Widening Digital Divides Amid Growing Global Adoption

In recent years, the importance of digital inclusion has been repeatedly emphasized in the international community. However, as indicated by various SDG indicators, "universal access" has still not been achieved—particularly in LDCs—highlighting a growing gap between international discourse and realities on the ground. The following section organizes the current situation through key indicators related to digital and ICT development.

(1) International Trends Reflected in Indicator 5.b.1 (Mobile Phone Ownership by Gender)

From 2019 to 2024, mobile phone ownership steadily increased worldwide, reaching approximately 80 percent of the global population by 2024. At the same time, the gap in ownership rates between men and women showed a narrowing trend. The gender gap was reported to have improved from 9.4 percent in 2021 to 7.0 percent in 2024. However, among those who do not own a mobile phone, women outnumber men by 31 percentage points. Regionally, as of 2024, female ownership rates exceeded male ownership rates in Europe and North America as well as in Latin America and the Caribbean. In contrast, significant

The first digital divide is a physical access disparity, in which people are unable to connect to the internet due to insufficient communication infrastructure. The second digital divide is a skills and education disparity, where individuals may possess digital devices but lack the knowledge or basic literacy skills required to use them effectively. The third digital divide is a utilization and benefit disparity, referring to differences between those who can leverage ICT to improve income, or education and those who cannot. (Nielsen, 2006)

gender disparities persisted in LDCs, Sub-Saharan Africa, and Central and Southern Asia. In particular, in LDCs the gender disparities reached 16 percentage points in 2024, indicating that structural constraints related to gender remained substantial. Overall, while mobile phone diffusion continues to progress, the elimination of gender disparities remains insufficient. Current improvement trends suggest that achieving full equality will require considerable time.

(2) International Trends Reflected in Indicator 9.c.1 (Coverage of Mobile Network Services)

With regard to SDG indicator 9.c, which sets the target of providing universal and affordable internet access in LDCs by 2020, mobile network service coverage in LDCs expanded across all technologies from 2015 to 2024. While 2G, 3G, and 4G coverage improved substantially and absolute connectivity levels advanced, the 2020 universal access target had not been achieved. As of 2024, 15 percent of the population in LDCs still lacked access to mobile broadband services. Similarly, 14 percent of the population in landlocked developing countries remained unconnected. At the same time, disparities in access to advanced technologies widened further. In 2024, 5G coverage reached 84 percent in high-income countries, compared to only 4 percent in low-income countries and 5.7 percent in LDCs. Compared with high-income countries, the access disparity was approximately 21-fold in low-income countries and 15-fold in LDCs. These figures clearly demonstrate that the newer the technology, the greater the access disparity. While older-generation technologies have seen continued improvement, 5G diffusion remains extremely limited, resulting in a qualitative deepening of regional digital disparities. The report of the UN Secretary-General (2025) explicitly states that LDCs and landlocked developing countries have not achieved Target 9.c and assesses that “universal access” has not yet been attained under current conditions. In light of the slow expansion of 5G, the report also highlights the need to position 4G as an “effective alternative solution.

(3) International Trends Reflected in Indicator 17.8.1 (Internet Usage Rates)

Internet usage rates continued to rise steadily from 2005 to 2024, with the global average expanding significantly from 15.6 percent to 67.6 percent. Since 2015, the average annual growth rate remained stable at 6.1 percent. In particular, East and Southeast Asia as well as Latin America and the Caribbean recorded increases of more than 60 percentage points over less than two decades. In contrast, growth in LDCs was limited. As of 2024, internet usage in LDCs stood at only 35.0 percent—less than half of the global average—while 65.0 percent of the population remained offline, indicating pronounced delays in technological access. Even in 2024, approximately 32.4 percent of the world’s population—about 2.6 billion people—did not use the internet, and the report clearly states that “universal access remains distant.” Particularly in LDCs and landlocked developing countries, usage rates

remain low and substantial regional disparities persist. With regard to gender gaps, globally, women's internet usage rates remain 4.2 percentage points lower than those of men. While in some regions, such as East and Southeast Asia and Latin America and the Caribbean, women's usage exceeds that of men, significant disparities remain in Sub-Saharan Africa (-14.2 percentage points) and in LDCs (-12.4 percentage points).

Accordingly, while international discussions have become increasingly sophisticated, the continued failure to achieve "universal access" in LDCs remains evident. This persistent gap between international discourse and on-the-ground realities continues to constitute a key challenge for development cooperation.

4. Trends in Digital and ICT Cooperation by Other Donor Agencies

In recent years, major international development finance institutions have elevated digital and ICT from "support for individual sectors" to "a core and cross-cutting foundation of development strategies." The World Bank (WB), Asian Development Bank (ADB), and African Development Bank (AfDB) have all positioned digital as an independent strategic domain in their policy documents and are implementing support aimed at enhancing inclusiveness, promoting economic structural transformation, and strengthening resilience.

(1) The World Bank

The WB revised its 2013 vision, "End Extreme Poverty and Promote Shared Prosperity," and since 2024 has adopted a new vision of "A world free of poverty on a livable planet." To achieve this new vision, the WB has established "People," "Prosperity," and "Planet" as its core pillars and has set 15 Outcome Areas for results management. As an organizing framework, "Infrastructure" and "Digital" are positioned as independent strategic domains. In the digital domain, "Digital Connectivity" and "Digital Services" are designated as outcome areas, with support focusing on improving access environments and strengthening the capacity to deliver public and private services.

Furthermore, through the Digital Development Global Practice, the WB aims to maximize the benefits of the digital dividend[8] while simultaneously mitigating risks related to disparities, security, and privacy. Its digital development framework is built on three foundational elements: (1) connectivity, (2) data infrastructure, and (3) ICT industry development, while three enabling elements are promoted: (1) digital safeguards, (2) digital public infrastructure, and (3) digital literacy and skills. Through this framework, the WB seeks to expand the use of digital technologies across sectors such as education, health, agriculture, finance, urban development, and public administration, while deploying support linked to climate change,

[8] A collective term referring to the "benefits," "value," and "effects" that digitalization brings to society as a whole. It denotes the positive impacts generated by digital technologies, including economic growth, inclusiveness, and efficiency.

private capital mobilization, gender inclusion, and employment and structural transformation.

(2) Asian Development Bank

ADB, in its Strategy 2030, aims to eradicate extreme poverty while achieving a prosperous, inclusive, resilient, and sustainable society. Within this framework, digital and ICT technologies are clearly positioned as indispensable elements both for promoting internal digital transformation within ADB and for supporting its developing member countries. In particular, ICT is aligned with ADB's key priorities and guiding principles and is utilized as an important tool for addressing development challenges in developing member countries. By sector, ADB promotes digital utilization as follows:

- Education: Distance and online education using ICT, digital literacy development, and the enhancement of technical and vocational education and training
- Health: Improved access to healthcare through telemedicine and health technologies
- Agriculture: Introduction of advanced technologies such as satellites and drones, and resource efficiency through smart agriculture
- Public services: Rapid and transparent administrative service delivery through ICT
- Private sector: Support for private sector participation, including telecommunications, facilitated through financing

Furthermore, ADB strengthens knowledge co-creation and sharing through digital means (involving universities, research institutions, and the private sector) and promotes broader utilization, including online dissemination. Based on the Digital Technology for Development Directional Guide, ADB also presents guidance to developing member countries on promoting inclusive and secure digital development aligned with Strategy 2030.

(3) African Development Bank

- AfDB, in its Ten-Year Strategy (TYS) 2024–2033, aims to realize a continent characterized by prosperity, inclusiveness, resilience, and integration while addressing the complex challenges facing Africa. Within this strategy, digital and ICT technologies are clearly positioned as strategic transformation drivers that unlock future growth opportunities and are regarded as indispensable elements both for improving operational efficiency within the Bank and for supporting development in African countries. ICT is aligned with the strategic objectives of the TYS and the priority development areas set out under the "High 5s[9]," and is applied cross-cuttingly as a key tool to accelerate Africa's socio-economic development. By sector, the key direction for digital utilization is as follows:
- Industrialization: Introduction of advanced technologies including AI and data services,

[9] The "High 5s" refer to the five strategic priority areas launched by AfDB in 2015 to accelerate Africa's sustainable development: (1) electrifying Africa, (2) feeding Africa, (3) industrializing Africa, (4) integrating Africa, and (5) improving the quality of life for the people of Africa.

support for digital entrepreneurship, and promotion of digital financial inclusion and fintech

- Improving quality of life: Support for the development of digital- and AI-enabled businesses through initiatives such as the Youth Entrepreneurship and Investment Banks (YEIBs)
- Agriculture: Improved market access through mobile agritech, dissemination of price information, and promotion of input utilization
- Integration and trade: Expansion of digital connectivity infrastructure, and strengthening of cross-border transactions and data interoperability

5. Japan's Assistance Policies and Measures

(1) Strategic Directions Set out in High-level ODA Policies

The Government of Japan positions the digital and ICT sector as a core component of its national strategy from the perspectives of diplomacy and security, economic growth, and the formation of international order. This direction is reflected in key national strategies such as the National Security Strategy of Japan, the Cybersecurity Strategy, the Infrastructure System Overseas Development Strategy 2030, and the Basic Plan on the Promotion of Public-Private Sector Data Use, which confirm Japan's policy intent to promote international rulemaking and DFFT.

Regarding national strategies, the revised Development Cooperation Charter (2023), as the highest-level document guiding Japan's ODA strategy, positions the digital sector as a strategic priority area. In particular, it identifies digital transformation (DX) as directly linked to all development challenges and as a key driver of "quality growth," and incorporates priorities such as the promotion of DFFT, problem-solving through data utilization and the social implementation of digital technologies, and responses to digital divides. The Charter also sets out policies to address vulnerabilities arising from the advancement of digital technologies, including cybersecurity challenges.

In formulating the revised Development Cooperation Charter, higher-level strategies, including the updated National Security Strategy of Japan (2022), were referenced. Accordingly, the Charter incorporates viewpoints of Free and Open Indo-Pacific (FOIP) and economic security and treats the strengthening of connectivity and support for international rulemaking through "quality infrastructure" and "digital" as priority areas. Furthermore, moving beyond conventional ICT assistance centered on human resource development and infrastructure development, the Charter promotes the utilization of digital technologies across all development sectors, including telemedicine, digital currency, and smart agriculture. The digital sector is thus positioned as one of the "priority areas for strategically implementing ODA" and is designated as one of the strategic areas of the "Co-creation for Common Agenda Initiative". Based on this policy direction, Japan intends to advance cooperation in developing countries in areas such as digital infrastructure development,

legal and institutional frameworks, and human resource development. In addition, the revised Development Cooperation Charter includes support for digital infrastructure development through collaboration with international organizations and the private sector, in line with the DFFT concept advocated by Japan.

As described above, the revised Development Cooperation Charter clearly prioritizes the digital sector and organizes it in continuity with directions set out in other national strategies, including the promotion of DX, economic security, FOIP, and DFFT. Cooperation in the field of “digital development” undertaken by MOFA and JICA is aligned with the policy direction articulated in the Charter.

(2) Trends in Japan’s Development Assistance

A review of the White Paper on Development Cooperation from 2019 to 2024 shows that Japan’s development cooperation in the digital and ICT sector, as well as in the cybersecurity field, evolved significantly. In 2019, efforts focused on developing ICT infrastructure as a foundation for economic growth and democratization in developing countries, with support centered on the introduction of broadcasting and telecommunications infrastructure and technology transfer that leveraged Japan’s strengths, such as disaster prevention ICT. At the same time, the Japan-ASEAN Cybersecurity Capacity Building Centre (AJCCBC)[10], a framework for cybersecurity cooperation targeting ASEAN countries, was launched, marking the initial stage of basic human resource development in the cybersecurity field.

From 2020 onward, the spread of COVID-19 made the necessity of digital transformation evident, and new forms of development cooperation utilizing digital technologies began to be explored. As an emergency response, Connect2Recover (C2R) project[11] was launched, and digital means such as remote training and online meetings were gradually incorporated into development cooperation activities. Strategically, as suggested by the subtitle of the White Paper on Development Cooperation 2020, “ International cooperation in the COVID-19 era: our commitment to the future ” support for digitalization in the health and education sectors was emphasized, and DX became a cross-cutting theme across all sectors. In 2021, ODA strategies explicitly centered on DX began to be fully implemented. The promotion of

[10] AJCCBC serves as a regional training hub to enhance ASEAN’s cyber defense capabilities. Established in Bangkok with funding from the Japan–ASEAN Integration Fund, it provides practical training programs and simulation exercises (such as CYDER) that integrate the expertise of Japan’s public and private sectors. In recent years, new initiatives have been launched, including trainer development programs, needs-based specialized exercises, and cybersecurity competitions. As a result, AJCCBC now functions as a core hub for cybersecurity human resource development in ASEAN. The significance of AJCCBC lies in the virtuous cycle it creates in ways that Japan contributes to strengthening solidarity with ASEAN and enhancing regional cybersecurity, thereby also bolstering its own security.

[11] This is a multilateral digital resilience support project that emerged from the response to COVID-19. It was launched jointly by Japan’s Ministry of Internal Affairs and Communications and the International Telecommunication Union and is operated through financial contributions from Japan and partner countries. The program supports participating countries in strengthening digital infrastructure and formulating national digital strategies, while addressing vulnerabilities that became evident during the pandemic.

quality growth and problem-solving through digitalization was clearly articulated, and cross-sectoral support for digital utilization became more evident. This included infrastructure assistance in the context of FOIP, such as submarine communication cables, as well as education DX initiatives, including the “Giga” pilot projects. In the field of cybersecurity, the AJCCBC produced tangible outcomes, and cooperation utilizing regional frameworks was further deepened. In 2022, with an eye toward the post–COVID-19 period, projects expanded in scale and scope, and their level of sophistication increased. C2R was rolled out in Africa, doubling the number of participating countries. In the field of cybersecurity, the number of training participants exceeded the original targets, indicating not only quantitative expansion but also that Japan’s support had entered a phase of institutionalization and consolidation.

In parallel with these developments, JICA established the “Office for STI and DX” inFY2020, creating an institutional framework to promote “DX” in addition to conventional ICT cooperation. During FY2020–2021, JICA formulated 20 “Global Agendas,” within which the “promotion of digitalization” was clearly positioned as a key thematic strategy. By 2023, Japan’s support in the digital sector had entered a new phase. As symbolized by the establishment of JICA DXLab[12]. Co-creation–based solutions incorporating private-sector technologies and data began to emerge. At the same time, support expanded toward building legal and institutional foundations reflecting international rule-making initiatives such as DFFT, as well as more advanced human resource development, including trainer training and the organization of competitions. Geographically, the scope of cooperation also broadened from Asia to Africa, Latin America, and Oceania, demonstrating a truly global expansion.

Furthermore, Japan has diversified its support in the digital and ICT sector through international cooperation schemes utilizing both multilateral and bilateral frameworks. These include contributions to the Cybersecurity Multi-Donor Trust Fund established by the WB to support capacity building in cybersecurity for low- and middle-income countries (2022-); assistance to strengthen the capacities of law enforcement officials through INTERPOL to address crimes committed in cyberspace (2023-); and support for the development of submarine cable infrastructure for Pacific Island countries in coordination with the United States and Australia (2019-). In addition, Japan positions the digital sector as one of the strategic areas of “Co-creation for Common Agenda Initiative.” Alongside conventional request-based assistance from partner countries, Japan has strengthened an approach

[12] This is a public–private co-creation platform established to accelerate the use of digital technologies in ODA. It connects JICA’s extensive field networks and operational experience with innovative technologies developed by private-sector actors, including start-ups, enabling rapid implementation of PoC projects tailored to the needs of developing countries. Using JICA project sites in approximately 150 countries as testbeds, the platform promotes the social implementation of new digital solutions. By the end of 2023, four PoC projects had been carried out in South Asia, Southeast Asia, and Africa, covering diverse fields such as healthcare DX solutions in India, EdTech deployment in Indonesia, and agricultural data utilization in Ethiopia.

whereby it proactively presents its strengths, including its expertise in digital and ICT technologies and experience in institutional development. Through this approach, Japan aims not only to support partner countries in overcoming development challenges and achieving economic growth, but also to contribute to solving Japan's own domestic challenges and fostering its economic growth.

As described above, Japan's support in the digital and ICT sector from 2019 to 2024 evolved from an "infrastructure-focused and foundational development phase" to a "service utilization and human resource development phase," and further toward an "advanced phase of co-creation and global collaboration." Support has been shifting from a conventional request-based approach to more strategic and proactive assistance through the "Co-creation for Common Agenda Initiative", enabling Japan to build a framework that can respond more flexibly to technological advancements in digital and ICT fields as well as changes in the international environment.

Chapter 3　Evaluation Results

This chapter presents a comprehensive evaluation from both the “development viewpoints” and the “diplomatic viewpoints,” in accordance with the ODA Evaluation Guidelines (January 2025) and the ODA Evaluation Handbook (January 2025), as a policy-level ODA evaluation (thematic evaluation) conducted by MOFA. For evaluations from development viewpoints, each section begins by presenting a four-tier rating based on the evaluation criteria (highly satisfactory, satisfactory, partially satisfactory, unsatisfactory), followed by a description of the rationale for the assessment.

1. Evaluation from Development Viewpoints

(1) Relevance of Policies

Rating：Satisfactory

This section examined the relevance of Japan’s development cooperation policies in the digital and ICT sector. However, as noted in the evaluation limitations, while support for the digital and ICT sector is partially reflected in the Development Cooperation Charter and the Strategy Document on Co-creation for Common Agenda Initiative, no mid-level policies or development cooperation strategies dedicated exclusively to the digital and ICT sector exist, unlike in fields such as gender or refugee assistance (e.g., development strategies for promoting women’s empowerment).Therefore, this evaluation assessed the relevance of the policy based on trends derived from aggregating individual measures implemented as Japan’s digital and ICT development cooperation, from the following perspectives: “A. consistency with Japan’s high-level policies,” “B. consistency with the needs of partner countries, domestic stakeholders, and project applicants,” “C. consistency with international trends and global challenges,” “D. complementarity with support provided by other donor agencies,” and “E. Japan’s comparative advantages.” As a result, the relevance of the policy was assessed as “high.”

A. Consistency with Japan’s High-level Policies

During the evaluation period, Japan’s high-level policies framework was defined by the Development Cooperation Charter (2015 and 2023 editions). In the 2015 Charter, the introduction of ICT was positioned as a means to promote economic growth, serving as a foundation for “quality growth.” In the 2023 Charter, “digital” was newly positioned as one of the priority areas for strengthening efforts toward “quality growth in a new era” and the eradication of poverty through such growth. This reflects a clear shift from viewing ICT as the introduction of specific technology in a particular sector to adopting DX as a comprehensive and cross-cutting concept, thereby positioning digital transformation as a more strategic field. It was also confirmed that, when planning development cooperation in the digital and ICT sector, consistency with these policy frameworks was duly examined.

Furthermore, in the Ministry of Foreign Affairs’ “Strategy Document on Co-creation for

Common Agenda Initiative" (published in September 2023), which serves as a related policy framework, the promotion of digitalization and DX is positioned as one of the "priority areas to be addressed strategically." The document stipulates that, in response to challenges faced by developing countries, Japan will present solutions by utilizing digital and ICT technologies through public–private collaboration, thereby supporting the development of institutional frameworks and the strengthening of industrial foundations in partner countries. It also clearly sets out development scenarios for promoting digitalization and DX, namely: "the utilization of digital technologies and promotion of collaboration with the private sector to address development challenges," and "the development of foundational environments for digitalization based on the concept of DFFT." In line with this policy direction, Cambodia has implemented initiatives such as support for the development of a digital economy and society, advancement of digital infrastructure, enhancement of cybersecurity, human resource development, and cybersecurity capacity-building projects.

Based on the above, it is concluded that Japan's development cooperation in the digital and ICT sector is consistent with its high-level policies framework.

B. Consistency with Partner Country Needs, Domestic Stakeholders, and Project Applicants

For countries where JICA conducted ex-post evaluations during this evaluation period from FY2019 to FY2024, this research examined whether national policies or strategies in the digital and ICT sector were in place and verified the consistency of Japan's cooperation with partner countries' development needs. Among the 87 countries where ex-post evaluations were conducted during this period, 82 countries were found to have established digital and ICT sector policies or strategies. In addition, a process has been instituted to confirm, at the project planning stage, whether proposed projects are consistent with the partner country's relevant policies and strategies. Based on these findings, Japan's cooperation in the digital and ICT sector is assessed to be aligned with the needs of partner countries.

In addition, in the case study countries of Ethiopia and Bangladesh, digital and ICT are positioned not merely as tools for technological adoption but as means to address structural national challenges such as disparities, employment, transparency, and industrial competitiveness. The digital and ICT policies of both countries have been designed and revised in a manner that responds to these challenges.

In Ethiopia, a national ICT policy was formulated in 2009, promoting development of infrastructure and human resource capacity building. The revised version issued in 2018 incorporated measures to strengthen e-commerce and universal access, thereby expanding the scope of the policy. Subsequently, Digital Ethiopia 2025, formulated in 2020, marked a shift from conventional infrastructure-oriented policies to a more advanced and practical national strategy that strategically applies ICT across multiple sectors, including

agriculture, manufacturing, tourism, and the IT industry. These policies were designed to address Ethiopia's national challenges, such as liberalization of the telecommunications market, job creation for youth, and diversification of industrial structures.

In Bangladesh, the government's *Digital Bangladesh* initiative (2009–2021) functioned as an infrastructure-oriented ICT strategy. Building upon this foundation, the country is now transitioning toward a more advanced and integrated strategy for digital economic and social transformation. During this transition, multiple reviews and revisions have been undertaken in legal frameworks, policy structures, and technology adoption. These reforms have been pursued to address socio-economic needs, including improving administrative efficiency, creating employment opportunities for youth, reducing urban–rural disparities, and strengthening international competitiveness.

C. Consistency with International Trends and Global Issues

(A) Consistency with SDGs

ICT and DX play an important role in the achievement of SDGs and are positioned in a particularly central manner within SDG 9, "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation." This goal explicitly highlights the expansion of access to ICT, and ICT is recognized as a foundation supporting economic growth and social inclusion. In addition, digital technologies are regarded, across other goals such as quality education (SDG 4), gender equality (SDG 5), and partnerships for the goals (SDG 17), as cross-cutting means to accelerate the achievement of the SDGs as a whole, and are therefore emphasized in policies and international cooperation.

(B) Consistency with Framework for Multilateral Cooperation

The desk review confirmed that the agreements reached in the G20 discussions on the digital and ICT sector were consistent with the positioning of digital and ICT in Japan's Development Cooperation Charter. To operationalize the concept of DFFT proposed in the summit meeting in Osaka (2019), the "Osaka Track," an international policy dialogue framework, was established at the meeting, and subsequent G20 meetings have continued to deepen discussions on this agenda. In the summit meeting in Rome (2021), the necessity of DFFT was reaffirmed from the perspective of addressing data disparities. Furthermore, at the Digital Economy Ministers' Meetings in 2023 and 2024, agenda items such as inclusive DX, the utilization of AI, and ensuring the reliability of online information were discussed, aligning with the Charter's emphasis on promoting DFFT and addressing development challenges through the social implementation of digital technologies.

According to the results of the questionnaire survey conducted among Japan's diplomatic missions, the Quadrilateral Security Dialogue (QUAD)—a strategic cooperation framework between Japan, the United States, Australia, and India—has formulated principles for Digital Public Infrastructure (DPI) and promoted digital infrastructure development in the Indo-

Pacific region. In addition, cooperation under the QUAD framework has advanced efforts to strengthen submarine cables and telecommunications infrastructure, through which Japan has contributed to enhancing wide-area digital connectivity. Furthermore, within the G7, Japan has participated in international rule-making processes aimed at realizing DFFT. Japan has also deepened cooperation with Europe through the Japan–EU Digital Partnership, engaging in institutional coordination on data flows and AI, as well as support for DX among small and medium-sized enterprises.

D. Consistency with Support from Other donors

Both WB and ADB have established strategies or action plans related to digital and ICT development, while AfDB addresses digital and ICT issues within its long-term strategic framework. These strategies and action plans also include references to cybersecurity. In Japan, JICA's operational strategy, the "Global Agenda," identifies the promotion of digitalization as one of its key thematic strategies, demonstrating consistency with the ODA policies of other donor institutions.

On the other hand, no explicit or systematic coordination in the digital and ICT sector was observed between Japan and these donors. However, in projects responding to the COVID-19 in the health sector, a case of role-sharing was identified: WB supported the introduction of ICT and DX-related equipment, ADB and the Asian Infrastructure Investment Bank (AIIB) contributed to vaccine deployment, and JICA focused on capacity development. Through this division of roles, duplication of assistance was avoided.

E. Japan's Comparative Advantages

No clear technological or sector-specific comparative advantage was identified. However, analysis of reports from JICA, ADB, WB, and AfDB using generative AI indicated distinct institutional tendencies: JICA places emphasis on capacity development (including advanced ICT human resource development and cybersecurity human resource training), WB focuses on policy formulation support, and ADB and AfDB prioritize development of infrastructure. Meanwhile, the introduction of cutting-edge technologies, including AI, remains limited across all donor institutions.

In the case study country of Bangladesh, a human resource development program was implemented to match highly skilled Bangladeshi ICT professionals with IT companies in Miyazaki City, which face labor shortages. As this initiative was conducted under Japan's ODA framework, it was accepted by the Bangladeshi side as a highly reliable form of cooperation, while also providing a conducive environment for participation by private-sector companies in Miyazaki City.

(2) Effectiveness of Results

Rating：Satisfactory

In this section, the effectiveness of results on Japan's development cooperation in the digital and ICT sector was evaluated from the following viewpoints.

A. Input：Development cooperation measures in the digital and ICT sector

B. Outputs and Outcomes: The degree of contribution to problem-solving through DX mainstreaming, the promotion of data utilization, and social implementation of digital technologies; the degree of contribution to digital and development of ICT infrastructure, promotion of DFFT, and the strengthening of cybersecurity

C. Impact: The degree of contribution to "quality growth" in a new era and poverty eradication through such growth

Based on a comprehensive assessment from these viewpoints, the effectiveness of the results of Japan's development cooperation in the digital and ICT sector is assessed as "High."

A. Inputs

For inputs, based on data published by the OECD, the study confirmed Japan's performance in development cooperation in the digital and ICT sectors, and examined whether appropriate inputs had been provided to achieve the outputs.

(A) Inputs Based on OECD Data[13]

The absolute amount of Japan's development cooperation in the ICT sector and the share of ICT-related cooperation within Japan's overall ODA from 2019 to 2023 are shown in the table below. Although the absolute amount decreased in 2020 and 2021 compared to the previous years, it increased significantly from 2022 onward, reaching a committed amount of USD 61 million in 2023. While the share of ICT-related cooperation within Japan's total ODA remains relatively small—averaging 0.12 percent over the five-year period from 2019 to 2023—it has increased every year since 2020. A regional breakdown of Japan's ICT-sector cooperation indicates that Asia, particularly East Asia, received the largest share. Of the total USD 123 million provided between 2019 and 2023, approximately 47 percent was allocated to Asia.

However, a country-level comparison of ICT-sector cooperation amounts reveals that, between 2019 and 2023, the Republic of Korea provided the largest volume of support in this sector, totaling USD 601 million, while Japan ranked fifth with USD 123 million. Korea's

[13] In the OECD Data Explorer, which serves as the data source for this analysis, no distinct category exists for the digital sector; only the ICT sector is classified. Accordingly, this section examines cooperation under the ICT sector category only. In addition, although the evaluation period covers FY2019 to FY2024, the source data are compiled on a calendar-year basis, and data for 2024 has not yet been published. Therefore, this section presents data for the period from 2019 to 2023.

high level of ICT-sector cooperation was largely attributable to major loan commitments for the development of Intelligent Transport Systems (ITS)[14], including USD 97 million for Kenya in 2019 and USD 156 million for India in 2021. Germany also made a significant contribution, committing a total of USD 134 million in 2021 for projects supporting digital transformation in developing countries worldwide.

Table 3-1 : Absolute Amount of Japan's ICT Sector Cooperation and Its Share in Japan's ODA

	2019	2020	2021	2022	2023	Total
ICT sector	16	10	9	26	61	123
ODA (total)	14,686	22,234	15,405	18,619	28,165	99,109
Share	0.11%	0.05%	0.06%	0.14%	0.22%	0.12%

(Unit: USD million, commitment basis)
Source : OECD Data Explorer

Table 3-2 : Regions of Japan's ICT Sector Cooperation (Cumulative Total, 2019–2023)

Region	Amount	Sub-region	Amount
Asia	58	East Asia	49.2
		South and Central Asia	6.1
		Middle East	0.6
		Asia – Regional / Multilateral	2.0
Africa	10	Sub-Saharan Africa	8.4
		North Africa	1.0
		Africa – Regional / Multilateral	0.4
America	7	South America	5.7
		North and Central America	0.2
		Americas – Regional / Multilateral	0.8
Oceania	29		
Europe	1		
Others	19		
Total	123		

(Unit: USD million, commitment basis)
Source : OECD Data Explorer

[14] This refers to the development of an integrated system linking people, roads, and vehicles through the application of advanced electronics technologies, with the aim of enhancing navigation systems, establishing automatic toll payment systems for highways, supporting safe driving, improving the convenience of public transportation, and upgrading logistics operations.

Table 3-3：ICT Sector Cooperation Amounts by Country (2019–2023, Top 6)

Country	2019	2020	2021	2022	2023	Total	Share
Korea	310	35	223	13	19	601	32.6%
Germany	66	41	166	84	41	399	21.6%
USA	24	10	13	21	122	190	10.3%
UK	4	45	49	20	24	142	7.7%
Japan	16	10	9	26	61	123	6.7%
France	3	61	4	44	2	114	6.2%
Others	65	36	43	44	86	275	14.9%
Total	489	239	507	253	356	1,844	100.0%

(Unit: USD million, commitment basis)
Source：OECD Data Explorer

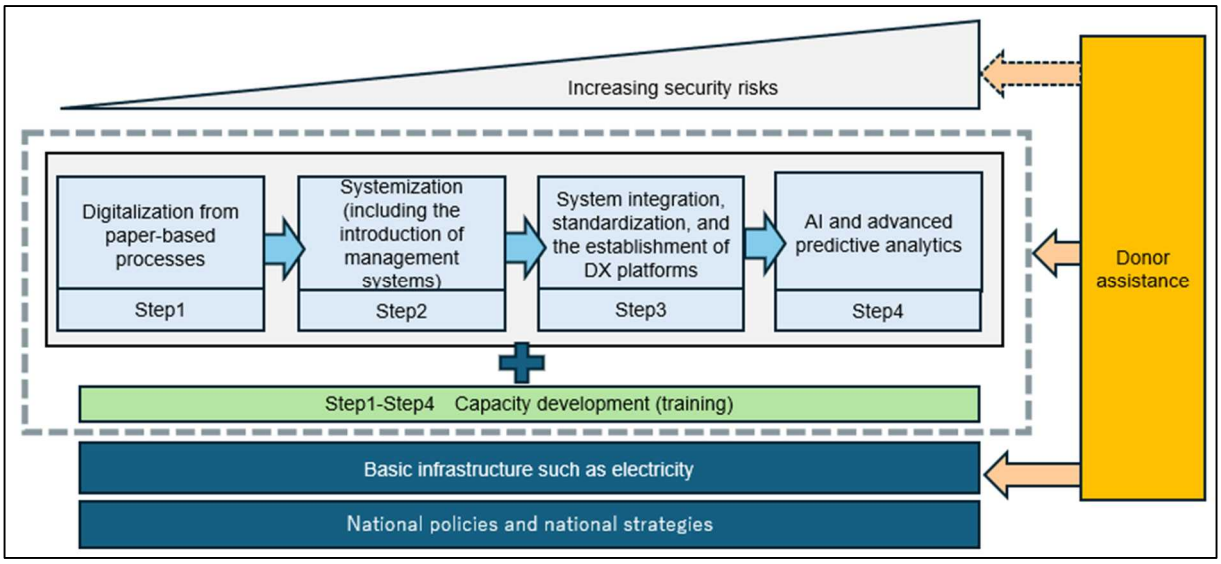
(B) Verification of Inputs Corresponding to Outputs

As shown in the aforementioned objective framework, this evaluation defined two outputs: “Output 1: DX Mainstreaming” and “Output 2: Digital and ICT Infrastructure Development.” This section examines whether appropriate projects were implemented to achieve these outputs.

Analysis of support records indicates that both the absolute amount of ICT-sector assistance and its share within Japan’s overall ODA have shown an increasing trend in recent years, including in the case study countries. It was also confirmed that these assistance included activities contributing to the achievement of the two outputs outlined above.

(i) Output 1：DX Mainstreaming

In this evaluation, DX Mainstreaming is defined as integrating digital technologies and data utilization, not as special measures, but as standard and cross-cutting approaches embedded across all development cooperation projects and phases. With regard to the progression of ICT and DX, it is generally structured into four stages: “1. digitalization from paper-based processes,” “2. systemization (including the introduction of management systems),” “3. system integration, standardization, and the establishment of DX platforms,” and “4. AI and advanced predictive analytics.” Finally, “0. capacity development” is positioned as a foundational element supporting these stages.



Note: While this framework illustrates a general progression of digitalization, in many cases donor support begins from an intermediate stage rather than from the initial step. It is also possible that, during the course of assistance, activities may return to an earlier stage.
Source: Prepared by the Evaluation Team

Figure 3-1：Process Toward DX Mainstreaming

As noted in Chapter 1, “Implementation Policy of Evaluation,” an examination of digital and ICT-related development cooperation implemented by JICA in the fields of “health,” “agriculture,” and “education” during the evaluation period (FY2019–FY2024) indicates that most of the cooperation activities undertaken were concentrated primarily in Stages 0 to 2. However, in the agricultural sector, initiatives in smart agriculture utilizing AI have begun to emerge in some cases.

Accordingly, Japan can be regarded as having supported the foundational stages of DX mainstreaming, particularly in areas such as the introduction of ICT (Stages 1 and 2) and capacity development.

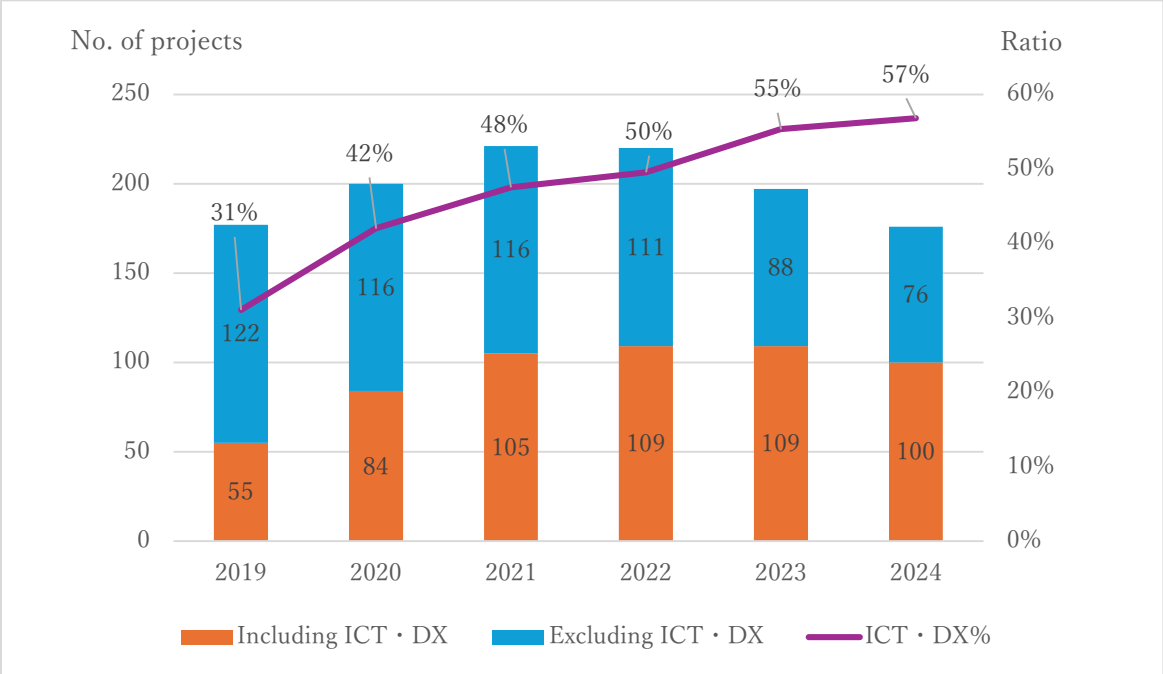
Trends in JICA’s support for digital and ICT-related cooperation in the fields of agriculture, education, and health are presented below.

Table 3-4：Trends in Digital and ICT-related Support in the Agriculture, Education, and Health Sectors

Sector	Main Supports
Agriculture	Agricultural extension worker training, market-oriented agriculture (SHEP), small-scale farmer income improvement, irrigation and farming practice improvement, etc.
Education	School construction and science and mathematics education support, teacher training and professional development, education dissemination activities, etc.
Health	Maternal and child health support, hospital construction and equipment provision, health workforce development, etc.

Source：Prepared by the evaluation team based on JICA’s ex-ante evaluation sheets and ex-post evaluation reports

The figure below presents the trend in the number and proportion of projects incorporating digital and ICT-related components, based on JICA's ex-ante evaluation sheets for the fiscal years 2019 to 2024. Projects containing digital and ICT-related components have increased steadily over time, with the proportion rising significantly from 31 percent in 2019 to 57 percent in 2024.



Note: The bar chart indicates the number of projects, while the line chart shows the proportion of projects within the total portfolio.
Prepared by the evaluation team based on JICA's ex-ante evaluation sheets

Figure 3-2：Status of DX Mainstreaming in JICA Projects

(ii) Output 2：Digital and ICT Infrastructure Development

Projects contributing to foundational infrastructure development were also implemented, including the development of telecommunications infrastructure, network expansion, data center construction, and the strengthening of cybersecurity.

In Bangladesh, ICT human resource development projects were carried out. In island countries such as Micronesia, Kiribati, and Nauru, as well as in Ethiopia, infrastructure support was provided to reduce geographic and economic disparities, including the installation of submarine cables and communication networks, and the introduction of educational content accessible offline.

In Bangladesh and Sri Lanka, projects were implemented to develop national geospatial information systems and databases for waste management.

In addition, cybersecurity-related projects and training programs were conducted in Ethiopia, Bangladesh, Indonesia, Cambodia, and other countries, including assistance to enhance cybersecurity capacity, strengthen the operation of National CERT (Computer

Emergency Response Teams）[15] and support the formulation of relevant ministerial ordinance.

On the other hand, in the agricultural sector, several cases were identified in which ICT equipment introduced was not effectively utilized due to mismatches between the supported technologies and local environments and needs, as well as insufficient IT literacy. For example, in a project in Ethiopia that attempted to introduce IoT sensors, an AI-based optimal cultivation support service for local farmers was planned. However, the service required large volumes of data input to operate AI functions, and as a result, standardization and widespread adoption of the service were not achieved.

(C) Validity of Inputs in the Case Study Countries

Japan's development cooperation in the ICT sector with Ethiopia and Bangladesh are summarized in the table below. No assistance in the ICT sector was implemented in Ethiopia from 2019 to 2021; however, assistance began in 2022 and continued to increase in 2023, surpassing the previous year. Bangladesh, meanwhile, has experienced a steady year-on-year increase in ICT sector support since 2019.

Table 3-5：Japan's Development Cooperation in the ICT Sector with Ethiopia and Bangladesh

Country	2019	2020	2021	2022	2023
Bangladesh	11	51	34	45	149
Ethiopia	0	0	0	181	194

(Unit: USD thousand, commitment basis)
Source：OECD Data Explorer

B. Outputs and Outcomes

(A) Output 1：DX Mainstreaming, Outcome 1：Promoting Data Utilization and the Social Implementation of Digital Technologies to Address Challenges

Based on the results of the questionnaire survey conducted among Japan's diplomatic missions, individual projects under Japan's digital and ICT-related development cooperation were identified in which activities contributing to "Output 1: DX Mainstreaming" were implemented, as well as projects that, following Output 1, aimed to achieve "Outcome 1: solving development challenges through the promotion of data utilization and the social implementation of digital technologies." These projects are summarized in the table below by sector, namely agriculture, education, and health. As shown in the table, by providing various forms of support as inputs to digital and ICT-related development cooperation, DX mainstreaming was advanced, and cases were identified in which this process potentially

[15] A specialized organization established at the national level to respond to cybersecurity threats, responsible for protecting critical infrastructure and government agencies in each country.

contributed to addressing development challenges through enhanced data utilization and the social implementation of digital technologies.

Table 3-6：Overview of Cases Contributing to Problem-Solving through DX Mainstreaming, Data Utilization, and Social Implementation of Digital Technologies in the Agriculture, Education, and Health Sectors

Country	Project (Project Period)	Input (Development cooperation measures in the digital and ICT sector)	Output 1 （DX Mainstreaming）	Outcome1 (Promoting Data Utilization and the Social Implementation of Digital Technologies to Address Challenges)
Agriculture Sector				
Peru	SDGs Business Validation Survey for Smart Agriculture Using Satellite Data and the Optimization of Farming Practices for the Japanese Immigrant Community (2024-2025)	Provision of farming support applications and extension services through Japanese-affiliated agricultural cooperatives	Introduction of smart agriculture utilizing satellite data	Improved agricultural productivity, enhanced price competitiveness, and response to labor shortages
Sri Lanka	The Project for Livelihood Enhancement of Small and Medium Scale Agri Producers through Strengthening Supply Chain Structure (2021-2025)	Assistance for strengthening supply chains of small and medium-scale farmers using the SHEP approach	Introduction of applications enabling online access to vegetable market prices and price display systems in wholesale markets	Contribution to increased farmers' income through the promotion of market-oriented agriculture
Cote d'Ivoire	Local Rice Promotion Project Phase 2 (2021-2026)	Smartphone-based financial management services for farmers without bank accounts	Expansion of digital agricultural financial services	Improved access to financial services
Education sector				
Guinea	Project for Mitigating the Impact of the Sahel Crisis and Strengthening the Resilience of Border Communities in Mali during the Political Transition (2023-2024)	Distribution of tablets to teachers and provision of training	Enabling access to educational platforms to strengthen emergency education systems	Improved learning environments for children affected
Papua New Guinea	Project for Strengthening Primary Teacher Pre-service Education in	Pilot use of mathematics application content	Improvement in the quality of mathematics and science lectures at	Enhanced teaching capacity in mathematics and

Country	Project (Project Period)	Input (Development cooperation measures in the digital and ICT sector)	Output 1 (DX Mainstreaming)	Outcome1 (Promoting Data Utilization and the Social Implementation of Digital Technologies to Address Challenges)
	Mathematics and Science (2020-2026)		primary teacher training institutions nationwide	science among student teachers
El Salvador	The Project for Promoting the Production of Digitalized Educational Materials (2024-2026)	Provision of equipment for producing digital educational materials	Promotion of high-quality learning material development for pre-primary to secondary students	Improved learning comprehension among students
Health sector				
Zambia	Project to Improve Access to Medical Imaging Diagnosis in Chisamba and Chibombo Districts, Central Province (2024-)	Provision of portable digital X-ray equipment	Expansion of diagnostic imaging services in local communities	Contribution to reducing urban–rural healthcare disparities
Zambia	TB Control Project through the Strengthening Case Finding and Management at Health Facilities in Lusaka District (2023-2024)	Provision of X-ray equipment equipped with AI functions	Rapid and accurate tuberculosis diagnosis	Contribution to early detection of tuberculosis and improved treatment rates
Kiribati, Solomon Islands, Papua New Guinea, Fiji	Supporting Digital Health System for Infectious Diseases Control in the Pacific Islands Countries (2023)	Establishment of systems for digital management of vaccination and related health data	Strengthening and improving efficiency of national health systems	Contribution to promoting Universal Health Coverage and revitalizing socio-economic activities
Mauritius	Support for Resilience through Digitization and Capacity Development (2020-2023)	Introduction of e-health systems and information management systems for COVID-19 testing and contact tracing	Establishment of linkages with mandatory entry forms for inbound travelers	Strengthened resilience through a multi-sectoral COVID-19 response project covering health, digitalization, economy, and social inclusion

Source: Prepared by the evaluation team based on the results of the questionnaire survey conducted among Japan's diplomatic missions.

In the case study countries as well, the results of field surveys confirmed that Japan's digital and ICT-related development cooperation has contributed to DX mainstreaming and to addressing development challenges through the promotion of data utilization and the social implementation of digital technologies.

In Ethiopia, the digital and ICT sector is not positioned as a priority area in the Country Development Cooperation Policy for Ethiopia. Accordingly, assistance in this sector has been provided only to the extent possible within other priority areas. Nevertheless, the entry of Safaricom Ethiopia—partially financed by Sumitomo Corporation—into Ethiopia's telecommunications market may represent a turning point in the digital and ICT sector. Ethiopia's telecommunications sector had long been monopolized by the state-owned Ethio Telecom; however, market liberalization enabled Safaricom Ethiopia to enter the market in 2021, introducing competition and leading to rapid improvements in the telecommunications environment, particularly in urban areas. Following the conclusion of a four-party Memorandum of Understanding between the Ministry of Innovation and Technology, Safaricom Ethiopia, Sumitomo Corporation, and JICA, concrete support utilizing Proof of Concept (PoC) initiatives through JICA DXLab was swiftly launched. At present, three PoC projects are underway in the agricultural sector. Safaricom Ethiopia, as an operator possessing both telecommunications and digital payment platforms, has also been actively exploring expansion into multiple sectors, including agriculture, education, refugee support, and healthcare. Specifically, discussions have been held with relevant stakeholders on initiatives such as ensuring traceability in the coffee industry, fertilizer supply to small-scale farmers, cash transfer and employment support in refugee camps, and related activities.

In Bangladesh as well, the digital and ICT sector is not positioned as a priority area in the Country Development Cooperation Policy for Bangladesh. Nevertheless, the rolling plan refers to the implementation of human resource development projects contributing to ICT industry promotion and innovation, as well as support for the establishment of distance learning systems and the utilization of ICT in the education sector. In the health sector, support was provided for the development of a COVID-19 vaccination application and the establishment of food inspection systems. In the agricultural sector, assistance was provided for crop monitoring using satellite imagery captured by drones, while in the education sector, support included the provision of tablet PCs to teachers.

(B) Output 2：Digital and ICT Infrastructure Development, Outcome 2：Promoting DFFT and Contributing to Strengthening Cybersecurity

As with section (A) above, based on the results of the questionnaire survey conducted among Japan's diplomatic missions, individual projects under Japan's digital and ICT-related development cooperation were identified in which activities contributing to "Output 2: Digital and ICT Infrastructure Development" were implemented, as well as projects that, following Output 2, aimed to achieve "Outcome 2: promoting DFFT and contributing to strengthening cybersecurity" These projects are summarized in the table below. As shown in the table, by providing various forms of support as inputs to digital and ICT-related development cooperation, digital and ICT infrastructure was developed, and cases were identified in which this process potentially contributed to the promotion of DFFT and the

strengthening of cybersecurity.

Table 3-7：Overview of Cases Contributing to Digital and ICT Infrastructure Development, Promotion of DFFT, and Strengthening of Cybersecurity

Country	Project (Project Period)	Input (Development cooperation measures in the digital and ICT sector)	Output 2 (Digital and ICT Infrastructure Development)	Outcome 2 (Promoting DFFT and Contributing to Strengthening Cybersecurity)
Micronesia, Kiribati, Nauru	East Micronesia Cable Project (2023)	Installation of fiber-optic submarine cables	Provision of high-speed, high-quality, reliable, and secure internet connectivity	Contribution to DFFT promotion
Cambodia	FY 2024 Project for Demonstration of 4G Open RAN Deployment in Cambodia (2024-)	Construction of a 4G Open RAN network in large commercial facilities and verification of call and data communication availability	Provision of stable mobile network services	Contribution to DFFT promotion
Sri Lanka	The Project for Formulation of Western Province Solid Waste Management Master Plan (2019-2022)	Development of, and operational support for, a waste management database	Establishment of dashboards visualizing waste collection, recycling, and composting volumes	Contribution to DFFT promotion
Rwanda	Digital & Innovation Promotion Project (2022-2026)	Establishment of an innovation promotion model through ICT entrepreneurship and market creation	Development of a leading ICT hub in Africa	Contribution to DFFT promotion
Global	Knowledge Co-Creation Program" Capacity Building in International Law and Policy Formation for Cybersecurity" (2021-2022)	Training provided to national cybersecurity policy officials from various countries	Enhancement of capacities necessary for formulating and implementing national cybersecurity policies	Strengthening of cybersecurity
ASEAN	Project for Enhancing ASEAN-Japan Capacity Building Program for Cybersecurity and Trusted Digital Services	Implementation of cybersecurity training and youth-oriented cybersecurity human resource development programs	Strengthening of the cybersecurity human resource development environment in the ASEAN region	Enhancement of cybersecurity response capacity across the ASEAN region

Country	Project (Project Period)	Input (Development cooperation measures in the digital and ICT sector)	Output 2 (Digital and ICT Infrastructure Development)	Outcome 2 (Promoting DFFT and Contributing to Strengthening Cybersecurity)
Indonesia	Project for Human Resources Development for Cyber Security Professionals (2019-2025)	Support for establishing professional cybersecurity education systems	Contribution to the sustainable supply of information security personnel for critical information infrastructure (electricity, transportation, finance, etc.) in both private sectors and government agencies	Strengthening of cybersecurity
Cambodia	Project for Improvement Cyber Resilience in Cambodia (2023-)	Provision of training and seminars for enhancing cybersecurity capacity	Improvement of participants' cybersecurity capabilities	Strengthening of cybersecurity resilience in the digital society
Viet Nam	Project on Capacity Building for Cyber Security in Vietnam (2019-2022)	Implementation of security training for policymakers and technical personnel	Improvement of capabilities for quality control, preparedness, and post-incident response in cybersecurity	Contribution to enhancing the Vietnamese government's resilience against cyberattacks
Mongolia	Project for Development of Human Resources in Cybersecurity (2023-2026)	Development of cybersecurity education programs for students, instructors, and civil servants	Improvement of national cybersecurity education	Promotion of a safe digital society
Rwanda	Economic and Social Development Program (FY2022)	Provision of automated fingerprint identification systems manufactured by Japanese companies	Strengthening of public security capacities	Strengthening of cybersecurity

Source: Prepared by the evaluation team based on the results of the questionnaire survey of Japan's diplomatic missions.

In the case study countries as well, it was confirmed that Japan's digital and ICT-related development cooperation has contributed to digital and ICT infrastructure development, the promotion of DFFT, and the strengthening of cybersecurity.

In Ethiopia, country-focused training programs entitled "Capacity Development for Technical and Managerial Operations in the Telecommunications Regulatory Sector" were conducted in 2023 and 2024, with participation by officials of the Ethiopian Communications Authority (ECA) and telecommunications operators. The training program covered not only telecommunications policies and regulatory frameworks, including the universal service system, but also areas that ECA is expected to address in the future, such as cost modeling of telecommunications tariffs, cybersecurity, and domain management. ECA expressed

strong interest in the continued implementation of this training program, and a formal request letter was submitted in August 2025.

In Bangladesh, through collaboration between local ICT professionals and Japanese companies, international human resource exchange and co-creation have been promoted. To date, more than 180 ICT professionals have contributed to building international career pathways and enhancing the digital responsiveness of local enterprises. This initiative represents both a notable effort and outcome. Projects related to ICT human resource development have received requests for continued support from the Government of Bangladesh, and Bangladeshi ICT professionals have been positively received from the Japanese side as well. Under this initiative, participants were provided not only with Japanese language training but also with orientation on daily life in Japan, including local practices such as waste disposal. Furthermore, as these ICT professionals were recognized as highly skilled personnel in the ICT sector and their activities were widely publicized within local communities, they were able to adapt smoothly to their communities. In addition to this initiative, training programs on cybersecurity and the development of a national geospatial information system were also implemented.

C. Impacts

(A) Contributing to the Eradication of Poverty through "Quality Growth" in a New Era

"Quality growth," as defined in the Development Cooperation Charter, is understood as growth that ensures that the benefits of development are shared across society, embodying "inclusiveness" so that no one is left behind, "sustainability" in which economic, social, and environmental dimensions are harmonized across generations, and "resilience" characterized by strong capacity to withstand and recover from various shocks such as natural disasters and economic crises. Japan's ODA cooperation in the digital and ICT sector has promoted assistances in many countries and regions, including Africa, Latin America, and Asia, contributing to enhanced local industrial competitiveness, job creation, income growth, and the eradication of poverty through ICT human resource development, startup support, financial inclusion, and digitalization in the agriculture, education, and health sectors. In particular, inclusive support for socially disadvantaged and vulnerable groups—such as women, youth, and small-scale farmers in rural areas—has been emphasized.

On the other hand, many of these projects are still ongoing, and the quantification of outcomes and the assessment of nationwide spillover impacts remain challenges for the future. There are also countries where cooperation in the digital and ICT sector remains limited, as well as countries facing significant constraints in institutional, human resource, and infrastructure capacities. Going forward, the accumulation of experience across more diverse regions and sectors, together with the visualization and sharing of outcomes, will be increasingly required.

Nevertheless, the potential of these assistance to enhance local industrial competitiveness, create employment, and increase income, while contributing to the eradication of poverty remains high. The digital and ICT sector can therefore be regarded as an area in which continued contributions to “quality growth” and the eradication of poverty are expected.

Furthermore, in the case study countries as well, it was confirmed that Japan’s digital and ICT-related development cooperation has contributed to “quality growth” and to the eradication of poverty through such growth.

In Ethiopia, Japan’s cooperation in the digital and ICT sector has consisted of relatively limited-scale assistances, such as agricultural PoC activities implemented through public–private collaboration between Safaricom Ethiopia and JICA DX Lab, and country-focused training programs in the field of telecommunications regulation. At present, these initiatives have not yet reached a stage where they sufficiently strengthen “quality growth”. However, in the agricultural PoC activities, new approaches aimed at improving the productivity of smallholder farmers and their market access are being piloted, and concrete signs are beginning to emerge and may contribute to inclusive growth. In addition, through training in the telecommunications regulation field, understanding is gradually deepening regarding institutional aspects essential for the sustainable development of the telecommunications sector, including the universal service system, cybersecurity, and telecommunications tariff models. As these efforts remain at an early stage, further progress toward practical implementation and institutional strengthening is expected.

In Bangladesh, several project-level assistances were identified that may have contributed to “quality growth” and the eradication of poverty as outlined in the Development Cooperation Charter. From the perspective of inclusiveness, examples include improved access to, and quality of, health through the introduction of digital health in the health sector, as well as the provision of tablet PCs to teachers in the education sector. From the perspective of sustainability, it was confirmed that activities under an ICT human resource development project have continued on a private-sector basis even after the completion of the ODA project.

(B) Other Positive and Negative Impacts

Japan’s ODA cooperation in the digital and ICT sector has generated positive impacts in many countries and regions, including the reduction of the digital divide and the promotion of private investment and industrial development. In particular, through the digitalization of education, health, and public administrative services, ICT human resource development, startup support, and financial inclusion initiatives, cooperation has contributed to inclusive growth, the empowerment of socially disadvantaged populations, and the enhancement of local industrial competitiveness.

On the other hand, challenges were also identified, including constraints in

telecommunications infrastructure, human resources and institutional frameworks, the burden of operation and maintenance costs, and concerns regarding potential job losses resulting from the introduction of ICT. In particular, limited benefits for rural areas and vulnerable groups, the rapid obsolescence of equipment provided and issues related to its disposal, and difficulties in ensuring sustainable operation after project completion were observed as key challenges.

In the case study countries, no other significant positive or negative impacts arising from Japan's digital and ICT-related development cooperation were identified.

(3) Appropriateness of Processes

Rating：Partially satisfactory

In this section, the appropriateness of the process was comprehensively evaluated from 7 viewpoints: "A. concrete measures addressing priority issues identified in the development cooperation charter and sectoral development policies," "B. consultations with partner countries," "C. the assistance implementation framework of relevant organizations," "D. processes for regularly monitoring policy implementation and effective collaboration and solidarity with diverse stakeholders, including private companies, public financial institutions, other donor agencies, international organizations, NGOs, local governments, and academic and research institutions," "E. appropriate management of assistance to ensure timely implementation amid changing needs," "F. appropriateness of publicity and information disclosure," "G. considerations and measures in light of the items most relevant to the evaluation target under "III. Implementation," Section 2 "Implementation Principles for Ensuring the Appropriateness of Development Cooperation" of the revised Development Cooperation Charter (2023)." Based on these viewpoints, the appropriateness of the process was assessed as having some challenges.

A. Concrete Measures Addressing Priority Issues Identified in the Development Cooperation Charter and Sectoral Development Policies

The revised Development Cooperation Charter (2023) identifies three approaches for effective and strategic development cooperation: (A) solidarity to realize co-creation, (B) further strengthening of strategic orientation, and (C) fine-tuned institutional design aligned with specific objectives. This section examines whether concrete measures based on these three approaches were undertaken in the planning and implementation of development cooperation in the digital and ICT sector.

(A) Partnerships for Achieving Co-Creation

In many countries and regions, multi-layered partnerships and collaboration with diverse stakeholders—including private companies, international organizations, other donor agencies, local governments, universities and research institutions, and NGOs—were

actively promoted.

Findings from field surveys in the case study countries show that, in Bangladesh, cooperation was established with local governments (particularly Miyazaki City), private companies such as Shinko Shuppansha KEIRINKAN Co., Ltd., universities including North South University and the University of Dhaka, and international organizations such as UNICEF. Through these partnerships, initiatives in ICT human resource development, local employment creation, and education-related ICT projects were implemented. In Ethiopia, collaboration with private sector partners—notably Sumitomo Corporation and Safaricom Ethiopia—enabled co-creation initiatives for digital human resource development.

Moreover, according to responses to the questionnaire sent to Japan's diplomatic missions, in Samoa, Papua New Guinea, Senegal, Barbados, and other countries, collaboration was undertaken with international organizations such as UNICEF, the International Organization for Migration (IOM), WB, and UNDP, as well as with local governments, private companies, and NGOs. Through these partnerships, the utilization of ICT in the sectors of education, health, infrastructure, and disaster risk management, as well as social inclusion, was promoted.

(B) Further Strengthening Strategic Approaches

With regard to the strengthening of strategic orientation, project formulation was conducted with a strong emphasis on alignment with the Country Development Cooperation Policy, sectoral strategies, and the partner countries' national strategies and policies.

The Office for STI and DX in JICA advanced the prioritization of the Global Agenda "digital for development" and DX mainstreaming, placing emphasis on internal consultations with relevant departments and the development of model cases. In Senegal, an inter-ministerial data exchange platform project aligned with the "Digital Senegal Strategy 2025 (SN2025)" and the Country Development Cooperation Policy for Senegal was implemented. In coordination with WB, EU, and the German Agency for International Cooperation (GIZ), monthly donor coordination meetings were held. In Peru and Indonesia, projects were implemented in alignment with national development strategies and disaster risk management ICT policies, aiming to strengthen sustainable growth, inclusiveness, and resilience.

Regarding the need to formulate dedicated strategies or guidelines for the digital and ICT sector within Japan's ODA framework, interviews revealed two contrasting views: of those who consider such strategies necessary and those who view them as unnecessary. Those arguing for the necessity of such strategies stated that dedicated strategic documents would be useful in light of the rapid pace of technological advancement, the need to address cross-sectoral challenges, and the importance of ensuring consistency between field-level implementation and policy frameworks. Those opposing the development of a dedicated strategy argued that digital and ICT issues are cross-sectoral by nature and can be

sufficiently managed through existing sectoral policy frameworks. They further cautioned that establishing a formal strategy could inadvertently limit adaptive responses at the operational level in the context of fast-evolving technological change.

(C) Fine-Tuned Institutional Design Aligned with Objectives

In terms of institutional design, many projects demonstrated careful and context-specific arrangements that took into account local social conditions, needs, risks, and sustainability .

According to the results of the questionnaire survey conducted for Japan's diplomatic missions, in countries such as Timor-Leste and Zambia, institutional safeguards to ensure appropriate use were thoroughly implemented, including obtaining formal commitments through Exchange of Notes (E/N) and diplomatic notes to guarantee non-military use and prevent military application[16].

In Uganda and Ethiopia, institutional arrangements were designed with attention to inclusiveness and sustainability. Measures included waiving training fees to encourage the participation of economically disadvantaged groups and women, utilizing regional university hubs, and integrating training programs for local staff.

In the project that provided a Japanese-made automated fingerprint identification system to Rwanda, measures were considered to prevent misuse of digital technology. In consultation with relevant local institutions, restrictions on the purpose of system use and mechanisms for periodic verification (including audits and reviews when necessary) were examined to ensure appropriate utilization.

In Samoa and Jamaica, training for staff of local implementing agencies and the strengthening of institutional design were undertaken, taking into account local telecommunications infrastructure, users' digital literacy and cultural background.

B. Consultations with Partner Countries

In many of Japan's diplomatic missions, development needs were identified and analyzed through regular consultations with partner country governments, local donor coordination meetings, and information exchange with JICA and international organizations. Meanwhile, in some countries, consultations and information sharing were conducted only on an ad hoc basis as necessary. In other cases, where no cooperation in the ICT sector had been implemented, no specific consultation framework was established.

C. Assistance Implementation Structure of Relevant Organizations

(A) Assistance Implementation Structure on the Japanese Side

Japan's ODA cooperation in the digital and ICT sector has been implemented under a

[16] The results of the questionnaire indicated that Japan's diplomatic missions in Timor-Leste and Zambia reported that they had obtained assurances of non-military use. However, commitments to non-military use are, in fact, standard provisions incorporated into Exchange of Notes (E/N) for most projects across countries.

multi-layered collaboration framework involving MOFA headquarters, Japan's diplomatic missions, JICA, partner-country governments, international organizations, and private-sector entities. Within Japan, JICA established the Office for STI and DX in 2020, and from 2021 onward, a promotion framework centered on two pillars—"DX mainstreaming" and "Digital infrastructure development"—was clearly defined. The office worked in a cross-cutting manner with thematic and regional departments, providing support for project formulation as well as internal advisory services (internal consultations) to field operations. However, because the digital and ICT sector is inherently cross-cutting, concerns were also raised that coordination within JICA and the consolidation of relevant knowledge and expertise remained challenging. At the field level, needs assessment, project formulation, implementation, and evaluation were carried out through mechanisms such as the ODA task force, regular coordination meetings, local consultations, dispatch of experts, and public–private partnerships.

In particular, JICA and Japan's diplomatic missions placed strong emphasis on consultation and information exchange with partner governments, international organizations, and other donor agencies. During project formulation, they paid careful attention to ensuring alignment with policy frameworks, avoiding duplication of support, and responding flexibly to local conditions and needs. For example, in Uganda, Senegal, Indonesia, and Peru, JICA headquarters, JICA's overseas offices, partner governments, and other donor agencies worked in close coordination. Flexible implementation frameworks were established through mechanisms such as monthly coordination meetings and the deployment of resident experts. As a result, strong consistency between policy frameworks and field-level implementation was observed and positively assessed.

At the same time, institutional constraints and limitations were also identified. Although the digital and ICT sector is characterized by rapid technological innovation and requires specialized expertise, the number of personnel with sufficient knowledge and experience in this field remained limited in Japan's diplomatic missions and JICA overseas offices. As a result, there were cases where the necessary technical support for project formulation, implementation, and monitoring could not be fully provided. In addition, several institutional and operational challenges were identified, including the single-year budgeting principle, siloed administrative structures, difficulties in making timely decisions, and the lack of long-term support schemes. With regard to hardware-oriented support such as the provision of digital and ICT equipment, some stakeholders pointed out that Japan's development cooperation needs in this area were limited, as the rapid pace of technological innovation makes it difficult for conventional long-term project formulation processes to respond promptly to evolving field needs and technological trends.

Furthermore, in some partner countries and regions, experience in digital and ICT cooperation was limited, institutional frameworks were underdeveloped, and expertise and human resources were insufficient. Adequate implementation structures were thus not in

place across all countries and regions.

Overall, in major countries and regions, institutional arrangements for project formulation and implementation were developed to a certain extent and generally functioned appropriately. However, further improvements remain necessary, including the development of specialized human resources, enhancement of flexibility in institutional operations, and the strengthening of field-level resources.

(B) Assistance Implementation Structures on the Partner-Country Side

The aid implementation structures on the partner country side were, in many countries and regions, established to a certain extent, enabling projects to be implemented in cooperation with Japan in areas such as policy formulation, human resource development, industrial promotion, and public–private collaboration. On the other hand, although ministries in charge of the digital and ICT sector exist in partner countries, many projects related to DX mainstreaming were requested not by these ministries but by line ministries in sectors such as agriculture and health. As a result, situations were observed in which cross-sectoral coordination and functions for comprehensive oversight of DX-related initiatives were not sufficiently effective.

There were also organizational challenges, including limited implementation capacity at the field level, shortages of skilled personnel, issues in institutional and operational frameworks, and gaps between policy and on-the-ground practices. Particularly in rural areas, unstable telecommunications infrastructure and electricity supply, combined with limited end-user capacity, resulted in variations in project progress management and the visibility of outcomes, giving rise to challenges in ensuring the quality of monitoring and the continuity of follow-up activities. Furthermore, in Ethiopia, insufficient coordination among ministries and across sectors became apparent in the process of promoting ICT utilization and digitalization. While digitalization policies were launched under the Prime Minister's Office and the Ministry of Innovation and Technology was positioned as the central driving body, a fully established cross-ministerial governance framework had yet to be achieved.

D. Processes for Regularly Monitoring Policy Implementation and Effective Collaboration and Solidarity with Diverse Stakeholders, Including Private Companies, Public Financial Institutions, Other Donor Agencies, International Organizations, NGOs, Local Governments, and Academic and Research Institutions

(A) Processes for Regularly Monitoring Progress

In Japan's ODA cooperation in the digital and ICT sector, processes for regularly monitoring project progress were established to a certain extent in major countries, regions, and projects. JICA, Japan's diplomatic missions, and MOFA headquarters worked in coordination with partner governments and relevant institutions to continuously monitor project progress through mechanisms such as regular meetings, progress monitoring

frameworks, local ODA task forces, and Joint Coordinating Committees (JCCs) for JICA technical cooperation projects.

The Office for STI and DX in JICA also established mechanisms to track the status of DX mainstreaming and digital infrastructure development by conducting interviews with relevant departments, compiling project statistics, and monitoring the progress of model cases. Even after project formulation, technical support was provided on a continuous basis, including assistance in preparing procurement specifications and monitoring the progress of PoC activities.

On the other hand, constraints in field-level human resources, challenges in institutional operations, and the limited capacity of partner governments have been noted, indicating that there remains room for improvement in enhancing the effectiveness of progress monitoring.

(B) Effective Collaboration and Solidarity with Diverse Stakeholders

In Japan's development cooperation in the digital and ICT sector, effective collaboration and solidarity with diverse stakeholders—including private companies, public financial institutions, other donor agencies, international organizations, NGOs, local governments, and universities and research institutions—were confirmed, as outlined below.

Table 3-8：Partners and Overview of Japan's Development Cooperation in the ICT Sector in Bangladesh and Ethiopia

Category	Overview of Collaboration
Private sector	Collaboration through human resource development, provision of ICT equipment, business matching, and technology transfer
International organizations and other donors	Cooperation with organizations such as UNICEF, WB, and ADB in education, health, border management, development of infrastructure, and institutional design
Universities and research institutes	Partnerships with local and Japanese universities for curriculum development, AI human resource development, and joint research
Local governments	Japanese local governments cooperate in hosting trainees, conducting training programs, and supporting the establishment of community centers
NGOs	Local NGOs and community organizations participate in human resource development and field-level implementation

Source: Source: Prepared by the Evaluation Team based on interview findings.

E. Appropriate Management of Assistance to Ensure Timely Implementation amid Changing Needs

Japan's development cooperation projects in the digital and ICT sector were implemented under multi-layered collaboration among partner country governments, MOFA headquarters, Japan's diplomatic missions, JICA, and international organizations, and were supported by regular and multi-faceted monitoring mechanisms.

The tracking of project progress, the identification of challenges, and the sharing of results

were conducted appropriately through information-sharing arrangements such as regular meetings and local consultations.

On the other hand, constraints in field-level resources, challenges in institutional operations, and variations in the quality of monitoring in local areas were observed, indicating that there remains room for further improvement to enhance the effectiveness of progress monitoring.

F. Appropriateness of Publicity and Information Disclosure

MOFA headquarters and JICA headquarters disseminated information on project activities and outcomes through official websites, press releases, international conferences such as the Tokyo International Conference on African Development (TICAD), and meetings organized by relevant ministries and agencies.

In many countries and regions, Japan's diplomatic missions and JICA's overseas offices also publicized project progress, outcomes, event information, and cooperation activities through websites, social networking services (SNS), local media, and press releases. For example, in Guatemala, at the handover ceremony of mobile phone charging stations installed at the airport, both the partner government and the international organization responsible for project implementation delivered remarks aligned with Japan's assistance policy. The event was covered by local media, contributing to broad public recognition of Japan's development assistance.

G. Considerations and Measures in Light of the Items Most Relevant to the Evaluation Target under "III. Implementation," Section 2 "Implementation Principles for Ensuring the Appropriateness of Development Cooperation" of the Revised Development Cooperation Charter

(A) Considerations and Measures Based on the Implementation Principles for Ensuring the Appropriateness of Development Cooperation

(i) Democratization, the Rule of Law, and the Protection of Human Rights

In many countries and regions, project design and implementation were carried out with due consideration for the consolidation of democracy, the rule of law, and the protection of fundamental human rights, as set forth in the Development Cooperation Charter. For example, in Peru's disaster risk management sector, projects emphasized transparency and fairness, promoting the digitalization of administrative services and information disclosure. These efforts contributed to strengthened governance and respect for human rights. In Timor-Leste, digital-sector cooperation was incorporated into projects aimed at improving basic social services, and project formulation was undertaken with attention to social inclusion and enhanced governance.

(ii) Avoidance of Military Use and the Promotion of International Conflict, and Considerations Regarding Military Expenditure and Arms-Related Matters

With regard to avoiding the use of assistance for military purposes or the facilitation of international conflict, institutional safeguards were thoroughly ensured, including the obtainment of formal assurances of non-military use through an Exchange of Notes (E/N) and diplomatic notes. For example, in grant aid cooperation, it was explicitly stipulated in the intergovernmental E/N that the assistance would not be used for military purposes and would be limited to non-military objectives, and this was formally confirmed with the partner government. Furthermore, in the fingerprint identification system provision project in Rwanda, measures were put in place to ensure appropriate use of digital technology and prevent misuse. Specifically, in consultation with the Rwandan investigative authorities—the recipient of the system—the purpose of use was limited to criminal investigations, thereby ensuring proper utilization of the system.

(iii) Gender Mainstreaming, Promotion of an Inclusive Society, and Ensuring Fairness

Viewpoints on social inclusion, particularly gender and equity, were explicitly incorporated in many projects. In Albania, assistances were implemented that emphasized improving access and strengthening capacities for women and vulnerable groups. In Uganda and Samoa, education-related ICT projects and human resource development initiatives were designed to reflect a social inclusion perspective, incorporating measures such as expanding learning opportunities for vulnerable groups, including girls and children with disabilities, and promoting the participation of women and economically disadvantaged individuals.

(iv) Prevention of Fraud and Corruption

Regarding the prevention of fraud and corruption, efforts were made to ensure transparency in institutional design and operational processes, to conduct consultations with host governments and international organizations, and to strengthen monitoring frameworks. In Peru and Timor-Leste, approaches such as “cooperation emphasizing transparency and fairness” and “ensuring appropriateness through monitoring by implementing agencies” were explicitly stated, indicating that due consideration was given to risks of fraud and corruption in the local context.

(v) Other Distinctive Considerations

In Senegal, the introduction of an interoperable inter-ministerial data exchange platform was expected to speed up administrative services and improve access to public services for all citizens, including low-income populations.

In Papua New Guinea, JICA's provision of mathematics learning applications and tablet devices helped establish an environment in which children in remote areas and vulnerable groups could access education. This contributed to reducing disparities in educational opportunities and enhancing inclusiveness.

(B) Considerations and Measures to Prevent the Digital Divide

(i) Considerations for Telecommunications Infrastructure and Access Environments

In many countries and regions, projects were implemented with a focus on developing telecommunications infrastructure and improving access for remote areas and vulnerable populations. For example, in Bangladesh, ICT centers were established under a local administration governance strengthening project to expand opportunities for rural residents to access information. In island countries such as Micronesia, Kiribati, and Nauru, infrastructure support was provided to reduce geographic and economic disparities through the installation of submarine cables and telecommunications networks, as well as the introduction of educational content that can be used offline.

(ii) Considerations Regarding Telecommunications Costs and Device Prices

Consideration was also given to reducing the burden of telecommunications costs and device prices, taking into account local economic conditions and the realities faced by vulnerable populations. In Ethiopia and Uganda, digital human resource development projects introduced mechanisms to encourage participation by economically disadvantaged groups and partial exemptions from training fees. In Zambia, learning tablets capable of being charged through solar power were introduced, along with educational content that can be used offline.

(iii) Considerations for Content, Literacy, and Education

The use of digital and ICT tools in the education sector, along with efforts to enhance digital literacy, also constituted an important element of the measures to address the digital divide. In Samoa and Jamaica, in collaboration with UNICEF and other partners, assistance was provided to ensure that children in remote areas and low-income households could access online learning materials. At the same time, assistance included strengthening teachers' digital and ICT utilization skills and providing training for implementing agency staff, thereby preventing the widening of utilization disparities. In Uganda and Albania, ICT education and financial inclusion projects targeting women and other vulnerable groups were implemented.

(iv) Considerations for Cultural and Social Inclusion

Viewpoints of social inclusion, including gender equality and the inclusion of persons with disabilities, were actively incorporated into many projects. In Samoa and Uganda, project design contributed to the expansion of learning opportunities for vulnerable groups, including girls and children with disabilities, thereby promoting social inclusion. In Guatemala, as part of support for the reintegration of returning migrants, mobile phone charging stations were installed at airport arrival facilities, contributing to reducing disparities in access to information.

(v) Institutional and Operational Measures

Collaboration with local governments, international organizations, and NGOs enabled institutional and operational arrangements tailored to local legal frameworks and social conditions. For example, in Senegal and Papua New Guinea, the digitalization of public services and the application of digital and ICT technologies in the education and health sectors contributed to promoting social inclusion and ensuring equity. During project formulation, communication infrastructure, user digital literacy, and cultural backgrounds were taken into consideration, and training for the staff of local implementing agencies as well as strengthening of institutional design were also undertaken.

2. Evaluation from Diplomatic Viewpoints

In this section, the evaluation from the diplomatic viewpoints was examined through two dimensions: “Diplomatic Importance” and “Diplomatic Impact.” Diplomatic importance was assessed as follows; “A. Japan’s national interests”; “B. addressing priority issues in the international community and regions/ tackling global challenges;” “C. bilateral relations with the case study countries;” and “D. ensuring the peace, security, and prosperity of Japan, as well as the safety and prosperity of its people” through Japan’s development cooperation in the digital and ICT sector. The analysis found that Japan’s development cooperation in the digital and ICT sector played a strategically important role in supporting peace and security, economic growth, the resolution of international challenges, and the strengthening of bilateral relations, by contributing to the maintenance of international order and the building of trust through the promotion of the DFFT concept and the enhancement of cybersecurity. The diplomatic impact was examined from the viewpoints of how Japan’s development cooperation in the digital and ICT sector contributed to: “A. benefits to Japan’s national interests;” “B. Japan’s presence in the international community;” “C. bilateral relations with the case study countries;” “D. Japan’s peace, security, and prosperity;” and “E. benefits for Japanese companies and organizations.” The findings indicate that Japan’s development cooperation in the digital and ICT sector strengthened Japan’s international presence and diplomatic foundations by contributing to the resolution of global challenges

and regional stability. It also generated spillover impacts that deepened bilateral relations, supported market expansion and human resource acquisition for Japanese companies, enhanced domestic industrial competitiveness, and strategically underpinned Japan's peace, security, and economic prosperity.

(1) Diplomatic Importance

A. Japan's National Interests

(A) Creating a Desirable International Environment

Cooperation in the digital and ICT sector plays an important role in building the foundations for international rulemaking and maintaining order in this field. In particular, disseminating the DFFT concept advocated by Japan to developing countries contributes to the promotion of universal values such as the rule of law and freedom. Furthermore, assistance for introducing telemedicine, distance learning, and disaster management systems contributes to social stability in partner countries and promotes the formation of a desirable international environment. As a result, Japan's presence in the international community and trust in its role in norm-setting are enhanced, thereby contributing to the maintenance of the international order.

(B) Maintaining and Strengthening Trust-Based External Relations

Cooperation in the digital and ICT sector builds trust between Japan and partner country governments and citizens through measures that directly improve people's daily lives. The introduction of remote education, digital health services, and disaster prevention ICT provides tangible benefits and a sense of security to citizens, leading them to recognize Japan's cooperation as "assistance that is useful in everyday life." Through these efforts, external relations are maintained and strengthened, contributing to the formation of a stable foundation for Japan's diplomacy.

(C) Ensuring the Peace and Security of Japan and Its People

Cooperation in areas such as cybersecurity and the use of digital and ICT technologies for disaster prevention contributes directly to Japan's own security by strengthening the capacities of partner countries. Enhancing the resilience of systems in partner countries reduces the risk of cyberattacks and regional instability spilling over to Japan. In addition, the use of digital and ICT technologies for disaster information systems and public security management also promotes regional stability and contributes to the safety of Japanese citizens and companies operating overseas. Such measures represent an effective means of safeguarding Japan's national peace and security.

(D) Achieving Prosperity through Economic Growth

Cooperation in the digital and ICT sector facilitates Japanese companies' overseas

expansion and entry into emerging markets, delivering tangible economic outcomes that directly serve Japan's national interests. Assistance for the introduction of smart cities, e-commerce, infrastructure systems, disaster prevention, and digitalized public services provides opportunities to disseminate Japanese technologies and services, thereby contributing to the strengthening of Japan's international competitiveness in the long term. Furthermore, Japan's engagement in international standard-setting in the digital domain plays an important role in creating a business environment advantageous to Japanese companies.

B. Addressing Priority Issues in the International Community and Regions / Tackling Global Challenges

Japan's development cooperation in the digital and ICT sector has made concrete contributions to the priority agendas of FOIP and TICAD, and can be evaluated as having played an important role in strengthening the foundations for norm-setting, regional stability, and problem-solving. FOIP and TICAD provide overarching policy frameworks for Japan's diplomacy and development cooperation. In this context, digital and ICT cooperation has served to operationalize these principles by delivering tangible outcomes in institutional development, human resource capacity building, and public service improvement.

Under FOIP-related initiatives, Japan established AJCCBC to disseminate its DFFT concept in developing countries. By providing continuous cybersecurity training and practical exercises, the Centre has contributed to enhancing a secure cyber environment grounded in the rule of law.

The White Paper on Development Cooperation 2023 positions DX as a key driver of "quality growth." Through the introduction of digital technologies in diverse sectors such as education, health, and agriculture, Japan's cooperation has contributed to addressing regional development challenges. In addition, support for digital infrastructure and institutional development has promoted regional economic connectivity, ensured stable data flow, and helped reduce the digital divide, thereby strengthening overall connectivity.

Looking at the evolution of the positioning of this sector in TICAD, ICT was incorporated as part of the industrial infrastructure at TICAD VI. Subsequently, at TICAD VII, digitalization came to be recognized as one of the strategies for solving development challenges, with increased emphasis on ensuring inclusiveness and leaving no one behind through efforts to bridge the digital divide. At TICAD VIII, digitalization was increasingly highlighted as a key enabler of investment promotion, innovation, human resource development, and institutional strengthening, and began to be treated as a dual driver of both economic growth and solutions to social challenges. In addition, the introduction of digital and ICT technologies in health, education, and disaster risk management was aligned with the promotion of SDGs and responses to climate change. Through these efforts, TICAD's digital initiatives contributed to addressing global-scale challenges by advancing "inclusive and

sustainable development," which lies at the core of the TICAD agenda.

Meanwhile, in the digital and ICT sector, no mid-level sector strategy has been established. As a result, outcome indicators in this field remain insufficiently developed. Therefore, indicators for measuring the outcomes of cooperation (such as reductions in cyberattacks, the number of users of ICT-based education and health services, decreases in fiscal burdens, and changes in the scale of e-commerce markets) have not been clearly defined. Going forward, while taking into account the cross-cutting nature of measures in this field, examining appropriate outcome indicators and advancing the "visualization of achievements" will be an important element in further enhancing Japan's international credibility and communication capacity.

C. Bilateral Relations with Case Study Countries (Japan–Bangladesh, Japan–Ethiopia)

Development cooperation in the digital and ICT sector contributed to strengthening bilateral relations.

(A) Ethiopia

In line with the Ethiopian government's national strategy *Digital Ethiopia 2025*, a Memorandum of Understanding was concluded between the Ministry of Innovation and Technology, Safaricom Ethiopia, Sumitomo Corporation, and JICA, under which activities for digital human resource development have been promoted. In the agricultural sector, three PoC projects are currently underway through JICA DXLab. In addition, Japan has been involved in supporting the formulation and implementation of the "Digital Agricultural Roadmap 2032," which aims to systematically advance digitalization in the sector. Furthermore, Japan has initiated support for the introduction of e-learning under Kaizen projects and for smart agriculture in the agricultural sector, demonstrating an expanding scope of cooperation utilizing digital and ICT technologies.

(B) Bangladesh

Japan's cooperation in the digital and ICT sector, initiated through the ICT human resource development program, contributed to strengthening bilateral relations with Bangladesh. Through this project, a large number of ICT professionals were employed by Japanese companies, thereby establishing a foundation for economic exchange and human resource circulation between the two countries. Currently, additional projects for ICT and DX human resource development are underway, and further strengthening of this human resource circulation is expected. In addition to agriculture, health, and education—the priority sectors examined in this evaluation—digital and ICT tools were also utilized in other areas, including the introduction of digital learning materials for refugee education in cooperation with UNICEF. These efforts supported improvements in social infrastructure

and fostered stronger confidence among partner countries, reinforcing bilateral ties.

D. Ensuring the Peace, Security, and Prosperity of Japan, as well as the Safety and Prosperity of Its People (Including Businesses)

The development cooperation in the digital and ICT sector can be evaluated as having played a strategically important role in supporting Japan's peace, security, and prosperity, as well as the safety and prosperity of Japanese citizens, including businesses.

With regard to Japan's peace and security, strengthening cyber defense capacities and government network security in developing countries through development cooperation contributes to reducing the risk of cyberattacks against Japan itself. In addition, assistance for the introduction of disaster management ICT and public security ICT helps mitigate social disruption caused by disasters or deteriorating security conditions and promotes stability across regions. These initiatives also contribute to creating a safer environment for Japan's neighboring regions, as well as for Japanese nationals and companies operating overseas.

Regarding Japan's prosperity, ODA projects such as smart city development, e-commerce promotion, and the digitalization of public administration have expanded opportunities for Japanese technologies and services to be introduced into overseas markets. This fosters future business opportunities and the development of emerging markets. Moreover, support for DFFT and data governance enables Japan to engage directly in the formation of international rules and standards, thereby helping create a global business environment in which Japanese companies can compete more effectively.

E. Others

Cooperation with the African Union (AU) as a counterpart is still ongoing; therefore, concrete cases demonstrating direct contributions to national interests cannot yet be confirmed. However, this cooperation has the potential to provide Japan with influence over continent-wide policy, standards, and rule-making processes. This represents a highly strategic significance, directly contributing to Japan's national interests as well as to international norm-setting and the enhancement of its global presence.

(2) Diplomatic Impact

A. Spillover Impacts on Japan's National Interests

Assistance in the digital and ICT sector has contributed to market expansion and the strengthening of diplomatic foundations through the adoption of Japanese products and cooperation in disaster prevention ICT. In addition, initiatives in cybersecurity and geospatial information development have contributed to regional stability and the creation of a favorable international environment. Furthermore, ICT human resource development and business matching initiatives in countries such as Uganda, Pakistan, and Bangladesh have helped address labor shortages faced by Japanese companies and facilitated their entry

into emerging markets, thereby contributing to the enhancement of Japan's domestic industrial competitiveness.

B. Japan's Contribution to Its Presence in the International Community

According to the results of the questionnaire survey conducted with Japan's diplomatic missions, assistance in the digital and ICT sector contributes in multiple ways to enhancing Japan's presence in the international community. Assistance for the African Continental Free Trade Area (AfCFTA) and collaboration with international organizations such as UNICEF directly supported the resolution of global challenges. Submarine cable projects in the Federated States of Micronesia and Sri Lanka, as well as the introduction of Japan's digital terrestrial broadcasting system, contribute to stabilizing wide-area communication infrastructure and strengthening regional resilience. In addition, projects such as the open radio access network (RAN) in the Philippines and digital terrestrial broadcasting in Sri Lanka were featured in summit meetings, while ICT-based migrant support initiatives in Latin America were broadcast on CNN. Through such diplomatic and international media exposure, Japan's presence and visibility were enhanced. At the same time, only about 30 percent of survey responses provided concrete examples indicating that these initiatives contributed to enhancing Japan's international presence, while more than half reported "not applicable" or "no specific examples at present," suggesting that the recognition of such effects remains limited.

Although the number of projects receiving high international recognition remains limited, some measures have been acknowledged as exemplary cases. The physical education teacher training college support project in Cambodia, introduced at UNESCO, developed e-learning materials and educational ICT infrastructure, thereby contributing to improved education quality and enhanced access for students in rural areas. Likewise, Bangladesh's multi-sector disaster response platform in the disaster management sector, introduced at a United Nations disaster conference, was recognized as a pioneering initiative in developing countries for establishing an ICT-based system to centrally manage information across multiple sectors. In both cases, ICT was utilized to enhance efficiency and accessibility, and these projects have been recognized by international organizations as model practices.

C. Contribution to Bilateral Relations with the Case Study Countries

As discussed above under "Diplomatic Importance _C. Bilateral Relations with Case Study Countries," development cooperation in the digital and ICT sector can be regarded as having played an important role in the bilateral relationships between Japan and Bangladesh, and between Japan and Ethiopia.

D. Contribution to Japan's Peace, Security, and Prosperity (Including Economic Development)

Japan's assistance in the digital and ICT sector contribute to stabilizing situations in partner countries through initiatives in disaster prevention, public security measures, and strengthened telecommunications infrastructure This has helped curb sources of regional instability and, in turn, contributed to stability in the international community. As a result, it generated indirect benefits for Japan by ensuring Japan's own peace and security, which depend on the stability of the international order.. At the same time, these forms of cooperation have encouraged the international adoption of Japanese products and technologies and facilitated human resource linkages, thereby enhancing the competitiveness of domestic industries and expanding overseas markets. Ultimately, this support has been closely linked to Japan's national interests by contributing to the country's sustained economic growth and prosperity.

E. Benefits for Japanese Companies and Organizations (Especially small and medium-sized enterprises)

According to the results of the questionnaire survey conducted with Japan's diplomatic missions, assistance in the digital and ICT sector provided Japanese companies with opportunities to enter emerging markets and enhance their brand recognition. The introduction of Fujifilm's portable X-ray equipment, NEC's submarine cable projects, and the adoption of Japan's digital terrestrial broadcasting system contributed to improved product evaluation and market penetration. In Bangladesh, Uganda, and Pakistan, ICT human resource and business matching initiatives promoted the global expansion of Japanese companies, collaboration with diverse talent, and the establishment of foundations for overseas business development. In addition, cases of small and medium-sized enterprises entering markets through disaster-related technologies, such as earthquake detection systems, were observed, serving as stepping stones for the future expansion of benefits.

On the other hand, approximately half of the responses indicated "no benefits" or "no specific examples," suggesting that the linkage between Japan's digital and ICT development cooperation and tangible benefits for Japanese companies—particularly small and medium-sized enterprises—has not yet been fully recognized. Nevertheless, many respondents expressed expectations for further progress in this area.

Chapter 4　Recommendations and Lessons Learned

In Japan's ODA, the digital and ICT sector has traditionally been positioned as one of the "means for addressing development challenges." In recent international trends, however, there has been a growing movement to reconsider this sector from a more strategic and cross-cutting perspective. In light of this shift, it is necessary to redefine digital and ICT not merely as tools for technology introduction, but as foundational elements capable of transforming the overall approach to development cooperation. To make this transition effective, this report presents the following recommendations. It first examines the need for a strategic vision (Recommendation 1.(1)), then proposes establishing rapid and flexible implementation mechanisms to operationalize that vision (Recommendation 2.(1)), and further emphasizes strengthening local institutional and human resource capacities to enhance policy execution (Recommendation 2.(2)), and it is essential to comprehensively promote these recommendations. While each recommendation addresses independent issues, they are mutually complementary, and such organic linkage is particularly important in the digital and ICT sector, where technological innovation and institutional design are closely intertwined, and where coordinated action is essential to maximize policy effectiveness. Although this research was originally expected to formulate recommendations with particular attention to the Indo-Pacific and African regions, responses from Japan's diplomatic missions indicated that Japan's digital and ICT cooperation in these regions varies significantly by country, with no distinctive regional characteristics or consistent trends identified. Accordingly, the recommendations are presented as globally applicable rather than region-specific.

The expected implementing institutions and timeframes for the proposed recommendations are shown in the table below.

Table 4-1：Expected Implementing Institutions and Timeframes for the Recommendations

Recommendations	Institutions				Timeframe	Priority
	Headquarters Level		Field Level			
	MOFA	JICA headquarters	Japan's diplomatic missions	JICA's overseas office		
1. Recommendations on Policy and Strategic Direction						
(1) Building and Structuring a Shared Understanding among Stakeholders on Japan's Digital and ICT Cooperation	○				Short-term	○
(2) Exploring support utilizing advanced technologies and developing the capacity to apply them		○		○	Mid-term	
2. Recommendations on Development Cooperation Planning and Implementation Methods						
(1) Examining project formulation based on the characteristics of the digital and ICT sectors		○	○	○	Mid-term	
(2) Strengthening policy implementation capacity through the dispatchment of digital and ICT experts		○	○	○	Mid-term	○

Source: Prepared by the Evaluation Team

1. Recommendations on Policy and Strategic Directions

(1) Building and Consolidating a Common Understanding among Stakeholders of Japan's Assistance in the Digital and ICT Sectors

Although assistance for the digital and ICT sector is partially described in the Development Cooperation Charter and Strategy Document on Co-creation for Common Agenda Initiative , and JICA has positioned DX within its "Global Agenda," the sector as a whole is not yet sufficiently framed within a comprehensive mid-level policy or strategy document that systematically organizes policy objectives, priority areas, implementation structures, and evaluation frameworks from a cross-sectoral perspective.

Looking at other sectors, in the humanitarian sector, a policy framework has been established based on Japan's "Humanitarian Aid Policy of Japan" (2011), organized around the shared concept of the Humanitarian–Development–Peace (HDP) Nexus. This framework organizes international trends, policy objectives, implementation schemes, and the division of roles among related ministries and agencies, JICA, international organizations, and NGOs. Similarly, in the gender sector, mid-level policies such as the Initiative on Gender and Development (2005–2015) and the Development Strategy for

Gender Equality and Women's Empowerment (2016) have been formulated. These policies have systematically organized linkages with higher-level policies, priority areas, assistance commitments, and even project classification frameworks.

In comparison, within the digital and ICT sector, the Basic Policy on Capacity Building Support for Developing Countries in the Cybersecurity Field (2021) has been established as a sector-specific policy, and digitalization and DX were also addressed in a cross-sectoral manner as a cooperation approach under the ”Co-creation for Common Agenda Initiative” (2023). On the other hand, the organization of a mid-level policy framework that presents an overarching cross-sector vision remains insufficient, and challenges can be identified bearing in mind that policy coherence, prioritization, and evaluation perspectives are not necessarily clearly defined. As a result, initiatives such as the promotion of DFFT in developing countries have not always been implemented in a policy-driven manner, remaining instead a collection of individual efforts. This has limited the strengthening of policy consistency and Japan’s international communication and outreach capacity.

Moreover, to ensure inclusiveness in the digital and ICT sector, it is necessary to recognize so that the digital divide extends beyond issues of physical access to include disparities in digital literacy and in the ability to independently apply digital technologies to solve problems and improve livelihoods. Socially vulnerable populations are less likely to benefit from digitalization, and the development of infrastructure alone is insufficient to bridge these disparities. Such multi-layered disparities cannot always be effectively addressed through individual projects and thus require sustained and coordinated efforts across development cooperation as a whole.

Beyond the social risks noted above, policy-level structuring is needed to clarify policy direction—including the promotion of DFFT—along with key considerations in project formulation and methods for measuring cooperation outcomes. Addressing these matters cannot be achieved solely through project-level adjustments and requires coherent policy-level guidance. Given the situation above, clarifying fundamental directions and shared perspectives for cooperation in the digital and ICT sector as med-level policies could enhance the effectiveness of development cooperation projects and Japan's international presence, while strengthening policy coherence and international outreach capabilities. Furthermore, developing guidelines that define basic perspectives that should be considered at a minimum as well as risks to be excluded at the project selection stage is expected to provide cross-sectoral common criteria and improve coherence in support. These need not be sector-specific; abstract principles such as “addressing partner countries’ development challenges” and “considering social risks related to digitalization” would suffice. For example, cooperation principles could include structuring of important principles such as a “human-centered approach” that promotes the use of digital and ICT technologies with a focus on improving people’s lives and enhancing social participation. Such an approach aligns with the Development Cooperation Charter’s principle of “human security” and the

SDGs' commitment to "leave no one behind," and can serve as a foundational basis for guiding cross-sectoral cooperation.

At the same time, the digital and ICT sector is characterized by rapid technological innovation and cross-sectoral applicability. If strategic documents are applied in an overly formalistic or rigid manner, there is a risk that flexibility to adjust support in response to technological developments and country-specific conditions may be constrained. In addition, outcome indicators—both quantitative and qualitative—related to the effectiveness of results and diplomatic significance have not been sufficiently defined. Going forward, advancing the "visualization of outcomes" through clearer definition and measurement of outcome indicators will be key to further enhancing Japan's international credibility and influence. For example, qualitative outcomes—such as improved equity in access to education, inclusiveness of healthcare services, and strengthened administrative governance—are relatively easier to conceptualize, and the strategic direction for promoting them is clear. By contrast, in the "Co-creation for Common Agenda Initiative", capturing quantitative outcomes—such as the volume of mobilized private financing or the number of companies entering new markets—remains challenging. Moreover, placing excessive emphasis on numerical target achievement risks creating a counterproductive situation in which projects are designed merely to meet preset indicators rather than to address genuine development needs.

Taking into account the advantages and disadvantages discussed above, it is important to build a shared understanding among relevant stakeholders regarding the basic directions and guiding principles for cooperation in the digital and ICT sector. To this end, it is desirable to consider updating and disseminating existing documents, to prepare reference materials with clearly organized wording, and develop methods for formulating outcome indicators.

(2) Exploring Support Utilizing Advanced Technologies and Developing the Capacity to Apply Them

When formulating digital and ICT-related projects over the next five years, it is necessary to consider support that utilizes cutting-edge technologies, together with the accompanying capacity development. An analysis of reports from JICA, ADB, AfDB, and WB using generative AI indicates that JICA tends to focus on capacity development, the WB on policy formulation support, and ADB and AfDB on development of infrastructure. Across these donor institutions, assistance incorporating cutting-edge technologies has remained limited. Therefore, expanding assistance that leverages advanced technologies presents an opportunity for Japan to build a comparative advantage in this field. At the same time, capacity development on the partner country side is indispensable to ensure that advanced technologies are effectively utilized and properly operated. If operational capacity is insufficient, technologies introduced through projects may not be utilized after project completion, making it difficult to sustain project outcomes. Moreover, jointly examining and

testing how such technologies can be applied and adapted to the specific conditions and challenges of the partner country provides an important opportunity for capacity development in itself. Accordingly, when providing support that employs cutting-edge technologies, it is necessary to promote capacity development in parallel with technology introduction, through processes of jointly exploring, testing, and refining technology applications suited to the partner country context.

2. Recommendations on the Planning and Implementation Methods of Development Cooperation

(1) Examining Project Formulation Based on the Characteristics of the Digital and ICT Sectors

In the digital and ICT sector, the pace of technological innovation is rapid, and there is a risk that conventional long-term project formulation processes may not respond swiftly to evolving field needs or technological trends. In this context, a framework that enables JICA to make timely decisions independently—namely, project formulation mechanisms that can keep pace with rapid technological change—is considered effective. One example is the utilization of PoC projects through JICA DXLab, under which project approval can be undertaken solely within JICA. Furthermore, in the digital sector, it is desirable not to fix detailed goals or technical specifications too rigidly at the project formulation stage. Instead, flexible and iterative project design, in which appropriate solutions are jointly identified with partner countries through continuous dialogue, is more suitable. Insights gained in the field and unforeseen outcomes can serve as valuable learning opportunities for improving projects. Therefore, it is important to place emphasis on such trial-and-error processes, while ensuring that project plans retain sufficient flexibility to be adjusted in response to technological developments and changes in partner countries' institutional and operational conditions.

In addition, digital and ICT-related development cooperation increasingly involves the use of big data. Accordingly, it is essential to establish clearer arrangements regarding data ownership, usage rights, and handling methods—particularly where personal data are involved.

(2) Strengthening Policy Implementation Capacity through the Dispatchment of Digital and ICT Experts

In many countries, national policies for the digital and ICT sector exist; however, implementation structures and inter-ministerial coordination mechanisms often remain insufficient. At the same time, the Country Development Cooperation Policy does not always position the digital and ICT sector as a priority area, and in some cases, cooperation policies at the field level are not clearly defined. Under these circumstances, promoting human resource development and capacity-building assistance for responsible and related

ministries and agencies in this sector requires the proactive and strategic deployment of experts utilizing Japan's existing cooperation schemes. For countries such as Ethiopia, where national policies exist but implementation systems and inter-ministerial coordination functions are weak, it is effective to assign long-term experts to digital and ICT-related ministries (for example, digital advisors specializing in policy and institutional design, ICT infrastructure design and operation, cybersecurity, and digital human resource development) to support policy implementation and provide coordination assistance for the cross-ministerial promotion of DX. This approach helps bridge gaps between policy and on-the-ground practice, strengthens policy execution capacity, and contributes to enhanced governance across the digital and ICT sector as a whole. Furthermore, for Japan's diplomatic missions and JICA overseas offices as well, cross-sectoral information-gathering and advisory systems in this would be established and strengthened, thereby providing an institutional basis for the development and deployment of cooperation strategies. In addition, when dispatching experts, it is important to fully take into account the institutional frameworks of the partner country (such as policy formulation processes and mechanisms for inter-ministerial coordination) and to deploy assistance in a manner whereby dispatched experts are embedded within the local policy implementation processes.

3. Lessons Learned

(1) The Significance of ICT Business Expansion by SMEs in Developing Countries and the Role of Public Support

In the digital and ICT sector, large-scale investments in factories or heavy equipment are generally not required, and business operations can often be launched with relatively modest initial capital. This creates greater opportunities, compared with other sectors, for Japanese small and medium-sized enterprises to establish startup-type businesses in developing countries. In such cases, support from public institutions such as the Government of Japan and JICA serves as a significant backing for SMEs, which typically have limited local credibility and name recognition in partner countries. Therefore, continued support and collaboration by Japanese public institutions until SME-led initiatives become sufficiently recognized in local markets holds substantial significance.

(2) Challenges in the Provision of Equipment in the Digital and ICT Sectors and Policy Directions for Addressing Them

In the digital and ICT sector, the pace of technological innovation is rapid, and there is a high risk that equipment becomes obsolete within a short period. Therefore, when considering equipment-based development cooperation in this field, it is effective to target versatile and widely applicable equipment with a lower risk of rapid obsolescence (for example, tablet PCs and liquid crystal displays). In addition, to ensure sustainability after project completion, it is important to formulate project plans that give due consideration not

only to maintenance systems but also to the proper disposal and management of equipment at the end of its life cycle.